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Water Resources Data for South Dakota
Water Year 1980

(U.S.) Geological Survey
Huron, SD

May 81

U.S. Department of Commerce
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DEPARTMENT OF THE INTERIOR
March 3, 1849

Water Resources Data for South Dakota

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT SD-80-1

WATER YEAR 1980

Prepared in cooperation with the State of
South Dakota and with other agencies

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NATIONAL TECHNICAL
INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA 22161

CALENDAR FOR WATER YEAR 1980

1979

OCTOBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
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NOVEMBER

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1980

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AUGUST

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31						

SEPTEMBER

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14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

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South Dakota and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

JAMES G. WATT, Secretary

GEOLOGICAL SURVEY

Doyle G. Frederick, Acting Director

For information on the water program in South Dakota write to
District Chief, Water Resources Division
U.S. Geological Survey
Room 317, Federal Building
200 4th St. S.W.
Huron, South Dakota 57350

1981

PREFACE

This report was prepared by personnel of the South Dakota district of the Water Resources Division of the U.S. Geological Survey under the supervision of R. E. Fidler, District Chief, and Alfred Clebsch, Jr., Regional Hydrologist, Central Region. It was done in cooperation with the State of South Dakota and with other agencies.

This report is one of a series issued by State. General direction for the series is by Philip Cohen, Chief Hydrologist, U.S. Geological Survey, and Robert J. Dingman, Assistant Chief Hydrologist for Scientific Publications and Data Management.

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Water resources data for the 1980 water year for South Dakota consists of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels in wells. This report contains discharge records for 112 gaging stations; stage and contents for 10 lakes and reservoirs; water quality for 22 gaging stations; and water levels for 6 observation wells. Also included are 37 crest-stage partial-record stations. Additional water data were collected at various sites, not part of the systematic data-collection program, and are published as miscellaneous measurements and analyses. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in South Dakota.

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CONTENTS

Page

Preface.. III
List of gaging stations, in downstream order, for which records are published........ VI
Introduction.. 1
Cooperation.. 1
Acknowledgments.. 1
Hydrologic conditions.. 1
Definition of terms.. 2
Downstream order and station numbers.. 8
Numbering system for wells and miscellaneous sites.. 8
Special networks and programs.. 9
Explanation of stage and water-discharge records.. 9
  Collection and computation of data.. 9
  Accuracy of field data and computed results.. 11
  Other data available.. 11
  Records of discharge collected by agencies other than the Geological Survey........ 11
Explanation of water-quality records.. 12
  Collection and examination of data.. 12
  Water analysis.. 12
  Water temperature.. 12
  Sediment.. 12
Explanation of ground-water level records.. 13
  Collection of the data.. 13
Publications on techniques of water-resources investigations.. 14
Gaging station records.. 20
Discharge at crest-stage partial-record stations.. 292
Miscellaneous temperature and conductance measurements.. 297
Ground-water levels.. 367
  Ground-water level records.. 367
  Quality of ground-water.. 370
Index.. 451

ILLUSTRATIONS

Figure 1. System for numbering wells and miscellaneous sites.. 8
2. Comparison of discharge at two long-term representative gaging stations during 1980 water year with median discharge for water years 1941-70.. 15
3. Map showing location of gaging stations in South Dakota.. 16
4. Map showing location of crest-stage partial-record stations in South Dakota.... 17
5. Map showing location of water-quality stations in South Dakota.. 18
6. Map showing location of ground-water observation wells in South Dakota......... 19

GAGING STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

[*Letter after station name designates type of data: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (t) water temperature, (s) sediment*]

MISSOURI RIVER BASIN

Page

LITTLE MISSOURI RIVER BASIN

Little Missouri River at Camp Crook (d) 20

SPRING CREEK BASIN

Spring Creek near Herreid (dc) 21

GRAND RIVER BASIN

North Fork Grand River near White Butte (d) 25
South Fork Grand River at Buffalo (d) 26
South Fork Grand River near Cash (d) 27
Shadehill Reservoir at Shadehill 28
Grand River at Shadehill (dc) 29
Grand River at Little Eagle (dcbmts) 31

MOREAU RIVER BASIN

Moreau River near Faith (d) 43
Moreau River near Whitehorse (dcbmst) 44

CHEYENNE RIVER BASIN

Beaver Creek:
Beaver Creek at Mallo Camp, near Four Corners, WY (d) 50
Stockade Beaver Creek near Newcastle, WY (d) 51
Hell Canyon near Jewel Cave, near Custer (d) 52
Hell Canyon near Custer (d) 52
Cheyenne River at Edgemont (d) 53
Hat Creek near Edgemont (d) 54
Cascade Springs near Hot Springs (d) 55
Angostura Reservoir near Hot Springs 56
Cheyenne River below Angostura Dam (dct) 57
Fall River at Hot Springs (d) 59
Beaver Creek near Buffalo Gap (d) 60
Cheyenne River near Buffalo Gap (dct) 61
Battle Creek near Keystone (d) 65
Grace Coolidge Creek near Game Lodge, near Custer (d) 66
Grace Coolidge Creek near Fairburn (d) 67
Grace Coolidge Creek near Hermosa (d) 67
Battle Creek at Hermosa (d) 68
Spring Creek near Hermosa (d) 69
Rapid Creek:
Castle Creek above Deerfield Reservoir, near Hill City (dctms) 70
Deerfield Reservoir near Hill City 75
Castle Creek below Deerfield Dam (d) 76
Rapid Creek above Pactola Reservoir, at Silver City (d) 77
Pactola Reservoir near Silver City 78
Rapid Creek below Pactola Dam (dct) 79
Rapid Creek above Canyon Lake, near Rapid City (d) 83
Rapid Creek above Water Treatment Plant, at Rapid City (d) 84
Rapid Creek at Rapid City (d) 85
Rapid Creek at East Main Street, at Rapid City (d) 86
Rapid Creek below Hawthorne Ditch, at Rapid City (d) 87
Meade Street Drain, at Rapid City (d) 88
Rapid Creek near Farmingdale (dct) 89
Boxelder Creek at Nemo (d) 93
Boxelder Creek near Nemo (d) 94
Boxelder Creek at Camp Columbus, near Nemo (d) 95
Boxelder Creek at Doty School, near Blackhawk (d) 96
Boxelder Creek near Rapid City (d) 96
Cheyenne River near Wasta (d) 97
Elk Creek near Rapid City (d) 98
Elk Creek near Elm Springs (d) 99
Keyhole Reservoir near Moorcroft, WY 100
Belle Fourche River at Wyoming-South Dakota State line (d) 101
Redwater Creek:
Cold Springs Creek at Buckhorn, WY (d) 102
Sand Creek near Sundance, WY (d) 103
Sand Creek near Ranch A, near Beulah, WY (d) 104
Murray ditch at Wyoming-South Dakota State line (d) 105
Redwater Creek at Wyoming-South Dakota State line (d) 106
Spearfish Creek at Spearfish (d) 107
Redwater River above Belle Fourche (d) 108
Hay Creek at Belle Fourche (d) 109
Inlet Canal near Belle Fourche (dct) 110
Owl Creek:
Belle Fourche Reservoir near Belle Fourche 114
Belle Fourche River near Fruitdale (d) 115
Horse Creek:
Indian Creek near Arpan (d) 116
Horse Creek near Vale (dct) 117
Belle Fourche River near Sturgis (dct) 121
Belle Fourche River near Elm Springs (dcbmts) 126

MISSOURI RIVER BASIN --Continued

Page

CHEYENNE RIVER BASIN--Continued

- Cheyenne River near Plainview (d)... 133
  - Cherry Creek near Plainview (d)... 134
- Cheyenne River at Cherry Creek (dcbmts)... 135
- Cheyenne River near Eagle Butte (ct)... 145

Lake Oahe near Pierre... 147

Missouri River at Pierre (cbmts)... 148

BAD RIVER BASIN

- Bad River near Midland (d)... 157
- Bad River near Fort Pierre (dts)... 158

MEDICINE KNOLL CREEK BASIN

- Medicine Knoll Creek near Blunt (d)... 162

MEDICINE CREEK BASIN

- Medicine Creek at Kennebec (d)... 163

Lake Sharpe near Fort Thompson... 164

CROW CREEK BASIN

- Crow Creek near Gann Valley (d)... 165

WHITE RIVER BASIN

- White Clay Creek near Oglala (d)... 166
- White River near Oglala (d)... 167
- White River near Kadoka (d)... 168
  - Little White River near Martin (d)... 169
    - Lake Creek below refuge, near Tuthill (d)... 170
  - Little White River near Vetal (d)... 171
    - Rosebud Creek at Rosebud (d)... 172
  - Little White River near Rosebud (d)... 173
  - Little White River below White River (d)... 174
- White River near Oacoma (dcbmts)... 175

Lake Francis Case at Pickstown (c)... 185

Missouri River at Fort Randall Dam (dcbmts)... 193

NIOBRARA RIVER BASIN

Niobrara River:

- Keya Paha River at Wewela (d)... 204

Lewis and Clark Lake near Yankton... 205

Missouri River at Yankton (d)... 206

JAMES RIVER BASIN

- James River at La Moure, ND (dct)... 207
- James River at North Dakota-South Dakota State line (ct)... 213
- James River at Columbia (dcbmts)... 217

Elm River:

- Maple River at North Dakota-South Dakota State line (d)... 224
- Elm River at Westport (d)... 225
- Moccasin Creek near Warner (d)... 226
- James River at Ashton (dt)... 227

Turtle Creek:

- Wolf Creek near Ree Heights (d)... 229
- Turtle Creek near Tulare (d)... 230
  - Medicine Creek near Zell (d)... 231
- James River near Redfield (t)... 232
- James River at Huron (dct)... 233
  - Sand Creek near Alpena (d)... 237
- James River near Forestburg (d)... 238
  - Firesteel Creek near Mount Vernon (d)... 239
  - Enemy Creek near Mitchell (d)... 240
  - Wolf Creek near Clayton (d)... 241
- James River near Scotland (dcbmts)... 242

Missouri River near Gayville (s)... 252

Missouri River near Maskell, NE (s)... 256

VERMILLION RIVER BASIN

East Fork Vermillion River:

- Little Vermillion River near Salem (d)... 260
- West Fork Vermillion River near Parker (d)... 261
- Vermillion River near Wakonda (d)... 262

Missouri River near Ponca, NE (s)... 263

BIG SIOUX RIVER BASIN

- Big Sioux River near Watertown (d)... 267
  - Willow Creek near Watertown (d)... 268
- Big Sioux River near Castlewood (d)... 269
  - Stray Horse Creek near Castlewood (d)... 270
  - Hidewood Creek near Estelline (d)... 271
  - Sixmile Creek near Brookings (d)... 272
- Big Sioux River near Brookings (d)... 273
- Big Sioux River near Dell Rapids (dct)... 274
  - Skunk Creek at Sioux Falls (d)... 278
- Big Sioux River at North Cliff Avenue, at Sioux Falls (dctb)... 279
  - Split Rock Creek at Corson (d)... 282
- Big Sioux River at Akron, IA (dcbmts)... 283

Missouri River at Sioux City, IA (d)... 291

WATER RESOURCES DATA FOR SOUTH DAKOTA, 1980

INTRODUCTION

Water resources data for the 1980 water year for South Dakota consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground water. This report contains discharge records for 113 gaging stations; stage and contents for 10 lakes and reservoirs; water quality for 22 gaging stations; and water levels for 6 observation wells. Also included are 37 crest-stage partial-record stations. Additional water data were collected at various sites, not involved in the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in South Dakota.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, VA 22202.

For water years 1961 through 1974, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1974 were similarly released either in separate reports or in conjunction with streamflow records. Beginning with the 1975 water year, water data for streamflow, water quality, and ground water are published as an official Survey report on a State-boundary basis. These official Survey reports carry an identification number consisting of the two letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report SD-80-1." Water-Data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

COOPERATION

The U.S. Geological Survey and organizations of the State of South Dakota have had cooperative agreements for the systematic collection of surface-water records since 1914, for ground-water levels since 1935, and for water-quality records since 1947. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Department of Water and Natural Resources, W. R. Neufeld, secretary.

Department of Transportation, E. L. Rowan, acting secretary.

East Dakota Conservancy Sub-district, J. L. Siegel, manager-engineer.

Black Hills Conservancy Sub-district, Ed Glassgow, manager-treasurer.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army; the Water and Power Resources Service, U.S. Department of Interior; the Fish and Wildlife Service, U.S. Department of Interior; the Environmental Protection Agency; and the Missouri River basin development program for gaging and water-quality stations.

Organizations that supplied data are acknowledged in station descriptions.

ACKNOWLEDGMENT

South Dakota district personnel who contributed significantly to the collection and preparation of the data in this report were: J. R. Little, chief, Hydrologic Data Collection and Analysis Section, L. D. Becker, E. M. Decker, B. L. Harrigle, D. W. Heyd, E. B. Hoffman, N. F. Leibbrand, D. K. Matthews, and M. D. Stevens.

HYDROLOGIC CONDITIONS

Combined storage in the four Missouri River main-stem reservoirs (Lakes Oahe, Sharpe, Francis Case, and Lewis and Clark) was 22,000,000 acre-feet at the end of the water year, a decrease of 4,100,000 acre-feet from the corresponding date a year ago.

Combined storage in the other major reservoirs (Shadehill, Angostura, Deerfield, Pactola, and Belle Fourche) was 201,369 acre-feet, a decrease of 96,289 acre-feet from the same date a year ago.

Precipitation was below normal through the spring breakup while runoff was below normal in the west to near normal in the southeast. After the spring breakup, rainfall ranged from about 5 inches below normal in the western part of the State to about 7 inches below normal in the eastern regions. Streamflow was near normal in the southeast and deficient in the west.

A comparison of monthly and yearly mean discharge with the median discharge for the 30-year base period (1941-70) for two key gaging stations is shown in figure 2.

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting English units to International System of units (SI) on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Adenosine triphosphate (ATP) is the primary energy donor in cellular life process. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

Algae are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer, tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C ± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C ± 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on M-enterrococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,447 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (FT^3/S, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to the material in a representative water sample which passes through a 0.45 µm membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determination of "dissolved" constituents are made on subsamples of the filtrate.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

Where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (μg/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/L, μg/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m^2), acres, or hectares. Periphyton benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Parameter code numbers are unique five-digit code numbers assigned to each parameter placed into storage. These codes are assigned by the Environmental Protection Agency and are also used to identify data exchanged among agencies.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle-size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay..........	0.00024 - 0.004	Sedimentation.
Silt..........	.004 - .062	Sedimentation.
Sand..........	.062 - 2.	Sedimentation or sieve.
Gravel........	2.0 - 64.0	Sieve.

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass or volume.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

Picocurie (PC, pCi) is one trillionth (1 x 10^{12}) of the amount of radioactivity represented by a curie (CI). A curie is the amount of radioactivity that yields 3.7 x 10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells/mL of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats or floating "moss" in lakes. Their concentrations are expressed as number of cells/mL of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column, and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [mg C/(m^2·time) for periphyton and macrophytes and mg C/(m^3·time) for phytoplankton] are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg O_2/(m^2·time) for periphyton and macrophytes and mg O_2/(m^3·time) for phytoplankton] are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge time mg/L times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lived.

Natural substrates refers to any naturally occurring emersed or submersed solid surface, such as a rock or tree, upon which an organism lived.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is that part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a 0.45 micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata is the following:

Kingdom	Animal
Phylum	Arthropoda
Class	Insecta
Order	Ephemeroptera
Family	Ephemeridae
Genus	Hexageria
Species	Hexagenia limbata

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Total in bottom material is the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Total, recoverable refers to the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent percent in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Turbidity (NTU) is based on the comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension of Formazin polymer under the same conditions.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WRD is used as an abbreviation for "Water-Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indention in a list of stations in the front of the report. Each indention represents one rank. This downstream order and system of indention show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 06442500, which appears just to the left of the station name, includes the 2-digit part number "06" plus the 6-digit downstream order number "442500".

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. See figure 1 below.

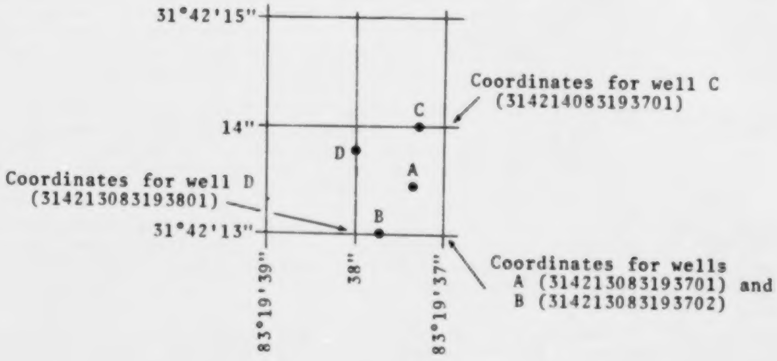

Figure 1. System for numbering wells and miscellaneous sites (latitude and longitude)

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Tritium network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard text-books, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

At some northern stream-gaging stations the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use; the datum of the present gage referred to National Geodetic Vertical Datum; and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS" on page 4.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with EXTREMES FOR THE CURRENT YEAR; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

Skeleton rating tables are published, immediately following EXTREMES, for stream-gaging stations where they serve a useful purpose and the dates of applicability can be easily identified.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

Data collected at partial-record stations follow the information for continuous record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft^3/s; to tenths between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures above 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the district office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

Records of discharge collected by agencies other than the Geological Survey

The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, Va. 22092, maintains an index of all discharge measurement sites in the State. Information on records available at specific sites can be obtained upon request.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small daily temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude. See Figure 1.

Measurements are made in many types of wells, under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to either National Geodetic Vertical Datum of 1929 or land-surface datum (lsd). National Geodetic Vertical Datum of 1929 is explained in the Definition of Terms paragraph. Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum above National Geodetic Vertical Datum of 1929 is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-four manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.

1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.

2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.

2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.

3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.

3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.

3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.

3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.

3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.

3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.

3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.

3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.

3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.

3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.

3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.

4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.

4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.

4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.

4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.

4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.

4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.

5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.

5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.

5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.

5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.

5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.

7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.

7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.

8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.

8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

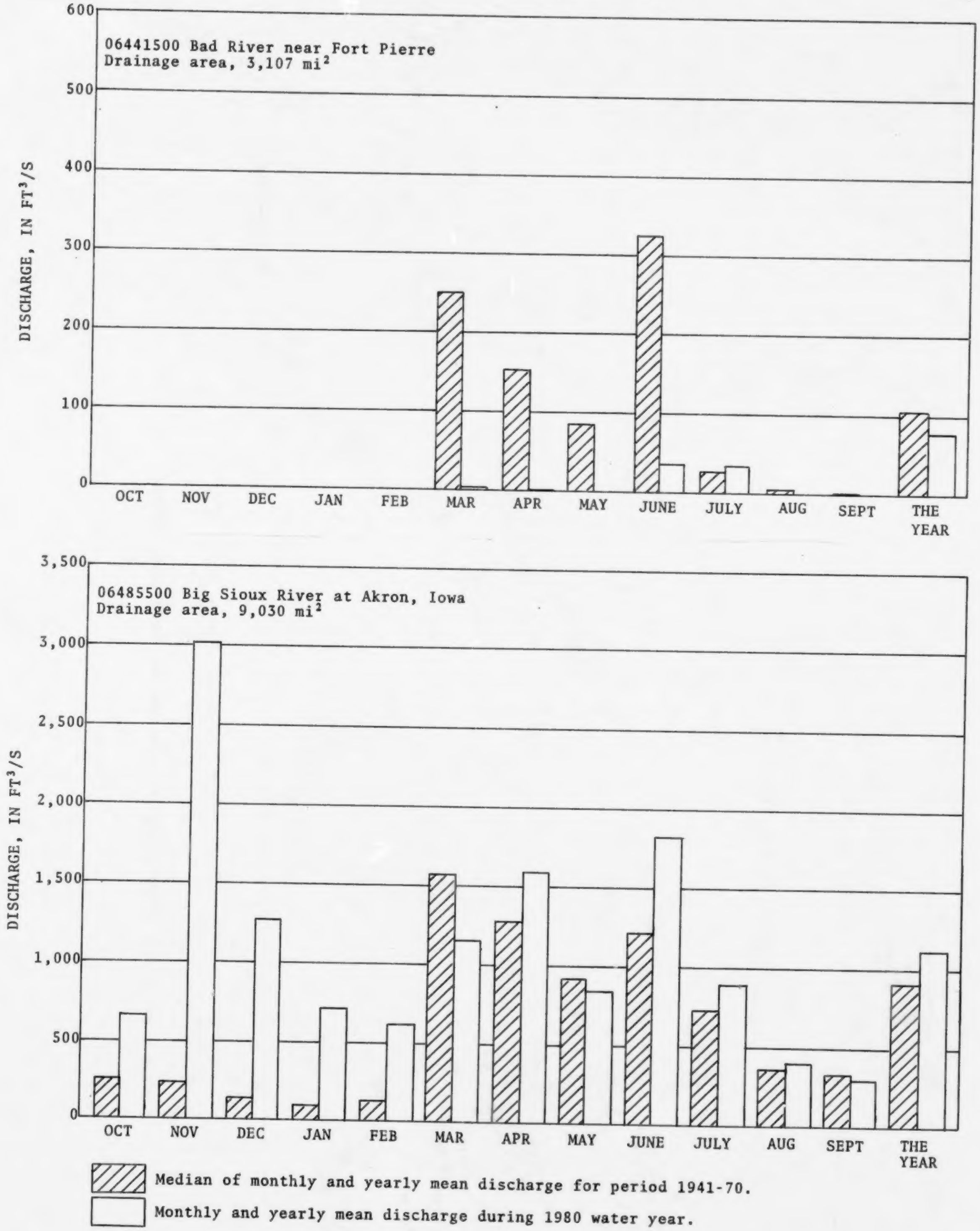

FIGURE 2.--Discharge during 1980 water year compared with median discharge for period 1941-70 for two representative gaging stations.

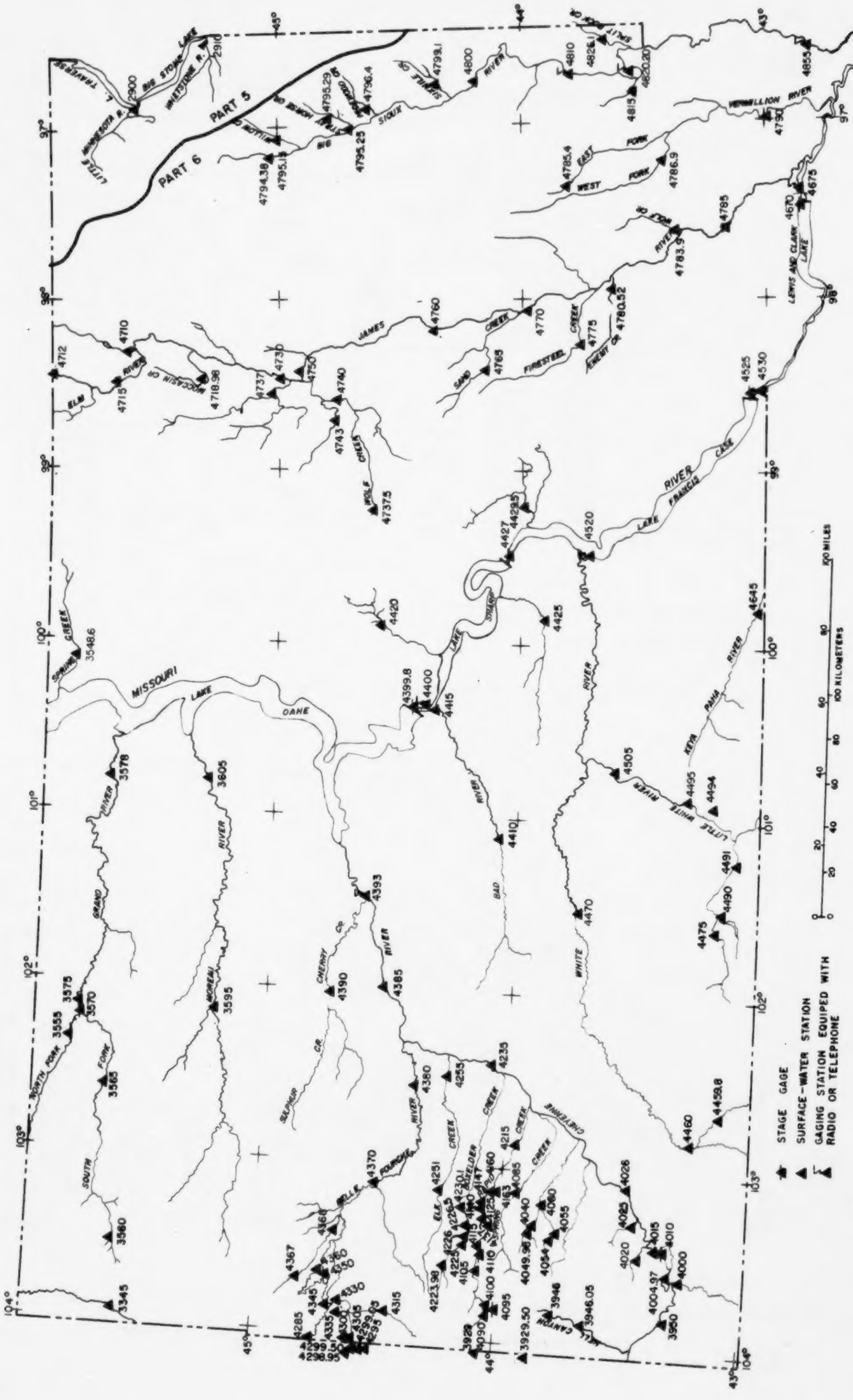
STAGE GAGE
SURFACE-WATER STATION
GAGING STATION EQUIPED WITH RADIO OR TELEPHONE
0 20 40 60 80 100 KILOMETERS
0 20 40 60 80 100 MILES
PART 5
PART 6
MISSOURI
LAKE OAHE
LAKE SHARPE
LAKE FRANCIS CASE
LEWIS AND CLARK LAKE
BIG STONE LAKE
LAKE TRAVERSE
LITTLE MINNESOTA R.
WHETSTONE R.
BIG SIOUX
VERMILLION RIVER
EAST FORK
WEST FORK
JAMES
ELM
MOCCASIN CR
SAND
FIRESTEEL CREEK
WOLF CREEK
SPRING CREEK
GRAND RIVER
NORTH FORK
SOUTH FORK
MOREAU RIVER
CHEYENNE RIVER
BELLE FOURCHE RIVER
CHERRY CR
SULPHUR CR
ELK CREEK
RAPID CREEK
BAD RIVER
WHITE RIVER
LITTLE WHITE RIVER
KEYA PAHA RIVER
HAT CANYON
45°
44°
43°
97°
98°
99°
100°
101°
102°
103°
104°
2900
2910
4794.38
4795.13
4795.25
4795.29
4796.4
4799.1
4800
4810
4826.1
4815
4820.20
4853
4790
4785.4
4786.9
4785
4783.9
4670
4675
4710
4712
4715
4718.98
4730
4737
4740
4743
4750
4760
4765
4770
4775
4780.52
47375
4525
4530
4520
4427
4429.5
4420
4425
4399.8
4400
4415
4410
4545
4505
4495
4494
4491
4490
4475
4470
4460
4459.8
3548.6
3578
3605
3575
3570
3555
3565
3595
3580
3345
4393
4390
4385
4380
4370
4367
4368
4360
4350
4345
4330
4335
4285
4315
4255
4251
4235
4215
4226
4225
4223.98
4105
4090
4095
4100
4110
4065
4040
4049.96
4050
4054
4055
4026
4025
4015
4010
4020
4004.37
4000
3950
3946
3946.05
3929.50
3928
4298.95

Figure 3. --Map of South Dakota showing location of lake and stream gaging stations

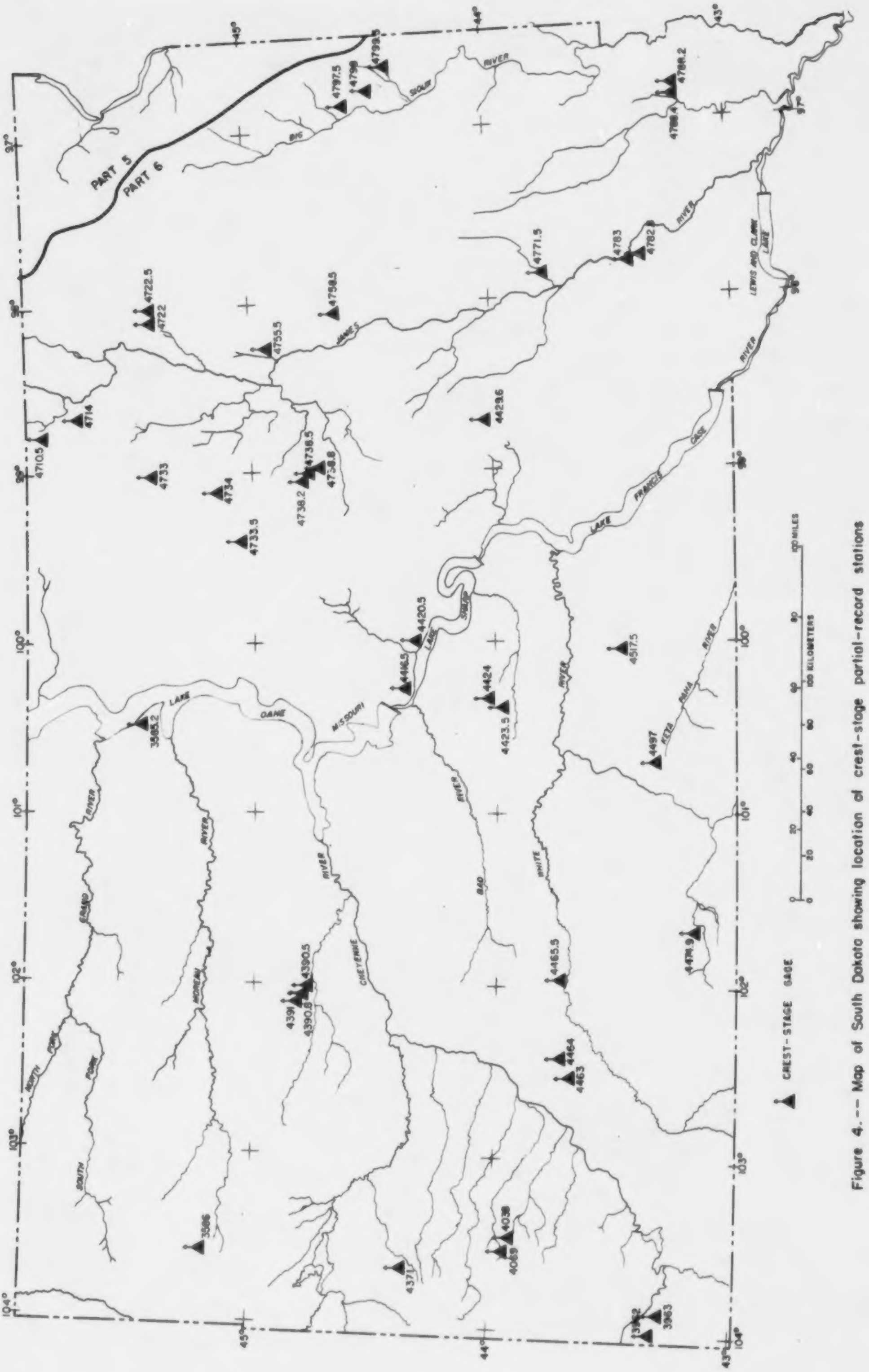
PART 5
PART 6
BIG SIOUX RIVER
JAMES RIVER
LEWIS AND CLARK LAKE
LAKE FRANCIS CASE
MISSOURI RIVER
LAKE SHARPE
LAKE OAHE
GRAND RIVER
NORTH FORK
SOUTH FORK
MOREAU RIVER
CHEYENNE RIVER
BAD RIVER
WHITE RIVER
KEYA PAHA RIVER
4799.5
4798
4797.5
4788.2
4788.4
4783
4782.8
4771.5
4759.5
4755.5
4722.5
4722
4714
4710.5
4733
4734
4733.5
4738.5
4738.2
4738.8
4429.6
4420.5
4416.5
4424
4423.5
4517.5
4497
4474.9
4465.5
4464
4463
3585.2
4390.5
4391
4390.8
3586
4371
4038
4069
3962
3963
45°
44°
43°
97°
98°
99°
100°
101°
102°
103°
104°
CREST-STAGE GAGE
0 20 40 60 80 100 KILOMETERS
0 20 40 60 80 100 MILES

Figure 4.-- Map of South Dakota showing location of crest-stage partial-record stations

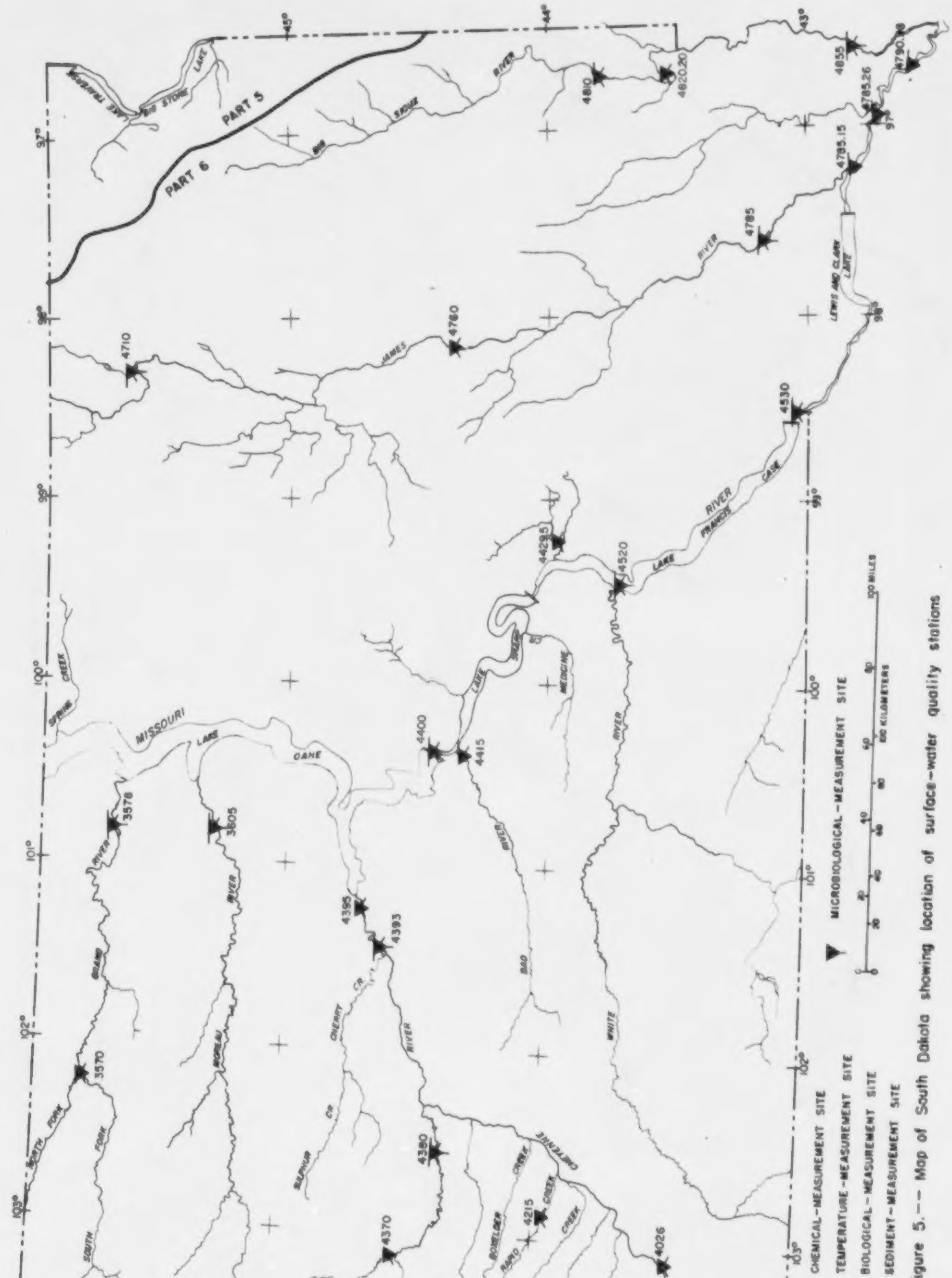
PART 5
PART 6
BIG STONE LAKE
LAKE TRAVERSE
BIG SIOUX RIVER
JAMES RIVER
LEWIS AND CLARK LAKE
LAKE FRANCIS CASE
MISSOURI RIVER
LAKE OAHE
LAKE SHARPE
SPRING CREEK
MEDICINE CREEK
BAD RIVER
WHITE RIVER
CHEYENNE RIVER
CHERRY CR.
SULPHUR CR.
MOREAU RIVER
GRAND RIVER
NORTH FORK
SOUTH FORK
BOXELDER CREEK
RAPID CREEK
SPRING CREEK
4855
4790.78
4785.26
4785.15
4785
4810
4820.20
4780
4710
4530
4520
4425
4400
4415
3578
3605
4395
4393
3570
4380
4370
4215
4026
4015
4346
4345
4285
4115
4090
97°
98°
99°
100°
101°
102°
103°
104°
43°
44°
45°
CHEMICAL-MEASUREMENT SITE
TEMPERATURE-MEASUREMENT SITE
BIOLOGICAL-MEASUREMENT SITE
SEDIMENT-MEASUREMENT SITE
MICROBIOLOGICAL-MEASUREMENT SITE
0 20 40 60 80 100 MILES
0 20 40 60 80 100 KILOMETERS

Figure 5.-- Map of South Dakota showing location of surface-water quality stations

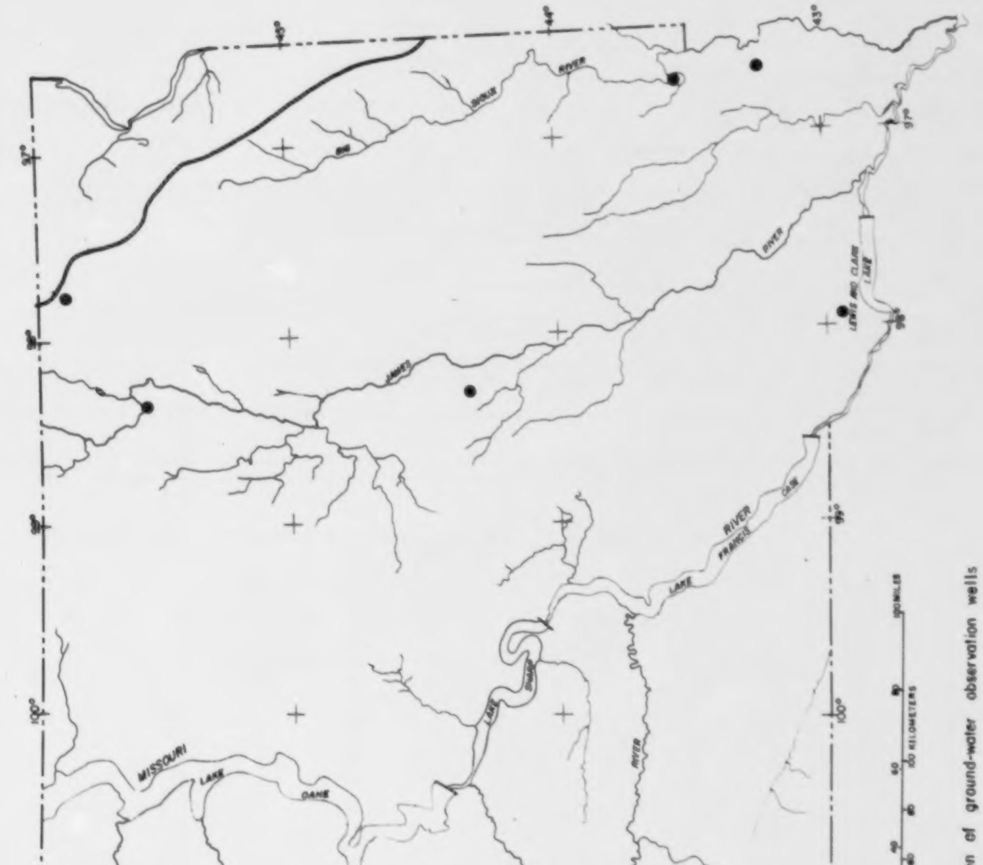
BIG SIOUX RIVER
JAMES RIVER
LEWIS AND CLARK LAKE
LAKE FRANCIS CASE
MISSOURI RIVER
LAKE OAHE
LAKE SHARPE
WHITE RIVER
BAD RIVER
GRAND RIVER
MOREAU RIVER
CHEYENNE RIVER
0 10 20 30 40 50 100 MILES
0 10 20 30 40 50 60 100 KILOMETERS
45°
44°
43°
97°
98°
99°
100°
101°
102°
103°
104°

Figure 6. --Map of South Dakota showing location of ground-water observation wells

06334500 LITTLE MISSOURI RIVER AT CAMP CROOK, SD

LOCATION.--Lat 45°32'49", long 103°58'23", in SW¼ sec.2, T.18 N., R.1 E., Harding County, Hydrologic Unit 10110201, on left bank 15 ft (5 m) upstream from bridge on State Highway 20 at east edge of Camp Crook.

DRAINAGE AREA.--1,970 mi^2 (5,100 km^2), approximately.

PERIOD OF RECORD.--September 1903 to November 1906, May 1956 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1904. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,108.98 ft (947.617 m) National Geodetic Vertical Datum of 1929. Sept. 2, 1903, to Nov. 30, 1906, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum. May 1956 to Oct. 8, 1957, nonrecording gage at site 15 ft (5 m) downstream, and Oct. 9, 1957, to Sept. 30, 1976, water-stage recorder at present site both at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Small diversions above station for irrigation. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--27 years, 140 ft^3/s (3.965 m^3/s), 101,400 acre-ft/yr (125 hm^3/yr); median of yearly mean discharges, 110 ft^3/s (3.12 m^3/s), 79,700 acre-ft/yr (98 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,420 ft^3/s (267 m^3/s) Mar. 24, 1978, gage height, 16.90 ft (5.151 m), present datum; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1952 reached a stage of about 18 ft (5.5 m), present datum, from local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 58 ft^3/s (1.64 m^3/s) June 17, gage height, 3.19 ft (0.972 m); maximum gage height, 5.36 ft (1.634 m) Mar. 19 (backwater from ice); no peak above base of 1,000 ft^3/s (28.3 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	4.5	7.0	4.4	2.0	6.0	34	4.2	3.0	.88	.00	.00
2	2.5	5.4	7.0	4.4	2.1	5.6	34	3.8	2.3	.00	.00	.00
3	2.6	5.3	7.5	4.0	2.2	6.0	32	3.5	3.2	.00	.00	.00
4	2.7	5.4	7.5	4.0	2.2	6.6	30	3.3	2.5	.20	.00	.00
5	2.9	5.4	7.0	3.8	2.2	7.0	27	3.2	2.8	2.9	.86	.00
6	2.9	5.5	7.0	3.6	2.2	7.6	27	3.0	3.2	2.0	.57	.00
7	3.9	5.4	6.5	3.4	2.2	8.0	25	2.9	5.2	2.0	.59	.00
8	3.3	4.9	6.0	3.4	2.2	8.0	23	2.9	11	1.0	.00	.40
9	3.6	4.6	6.0	3.0	2.2	8.0	21	2.6	5.3	.80	.00	.80
10	3.5	4.5	6.0	2.5	2.2	8.5	18	2.8	3.8	.80	.20	.80
11	2.8	4.4	5.5	2.5	2.2	8.5	16	3.7	3.2	.00	.60	.80
12	2.8	4.3	5.5	2.8	2.1	8.5	15	4.6	2.4	.00	.80	.87
13	3.2	4.5	5.0	2.8	2.1	9.2	15	4.6	2.2	.00	4.7	1.1
14	3.4	5.0	5.0	3.0	2.0	9.2	13	4.0	2.4	.20	4.4	1.6
15	3.7	5.0	5.0	3.0	1.9	10	12	3.4	2.3	1.0	.00	1.6
16	4.1	5.5	4.0	3.0	2.1	10	14	3.2	1.7	.20	.00	1.6
17	4.1	5.5	5.0	3.0	2.5	10	17	2.3	19	.00	.00	1.8
18	4.7	5.5	5.0	3.0	3.0	10	15	2.5	22	.00	.00	1.8
19	3.9	5.6	5.0	2.8	3.5	10	13	3.3	10	.00	.00	1.8
20	4.1	5.8	5.0	3.0	3.5	11	11	4.1	6.8	.00	.00	1.8
21	4.6	5.4	5.0	3.0	3.5	11	10	4.0	4.8	.00	.00	1.7
22	5.6	5.4	5.0	3.0	3.5	11	8.6	3.7	3.3	.00	.00	1.6
23	4.1	5.4	5.0	3.2	4.0	11	8.0	2.7	4.1	.00	.00	1.6
24	4.3	5.4	4.6	3.2	4.5	13	7.0	2.7	3.2	.00	.00	1.6
25	4.9	6.0	4.6	3.0	5.0	17	6.6	2.7	2.7	.00	.00	2.2
26	5.5	7.0	4.6	2.8	5.6	30	6.0	3.0	.58	.00	.00	1.6
27	4.1	6.5	4.6	2.4	6.0	36	5.8	1.6	.41	.00	.00	.81
28	4.3	6.5	4.3	2.0	6.5	43	6.2	1.8	1.7	.00	.00	.66
29	4.0	6.5	4.0	1.8	7.0	40	6.0	3.7	.89	.00	.00	.51
30	4.2	7.0	4.0	1.9	---	39	4.8	3.9	1.0	.00	2.9	.58
31	4.3	---	4.0	2.0	---	36	---	3.7	---	.00	.00	---
TOTAL	117.0	163.1	167.2	93.7	92.2	454.7	481.0	101.4	136.98	11.98	15.62	29.63
MEAN	3.77	5.44	5.39	3.02	3.18	14.7	16.0	3.27	4.57	.39	.50	.99
MAX	5.6	7.0	7.5	4.4	7.0	43	34	4.6	22	2.9	4.7	2.2
MIN	2.4	4.3	4.0	1.8	1.9	5.6	4.8	1.6	.41	.00	.00	.00
AC-FT	232	324	332	186	183	902	954	201	272	24	31	59

CAL YR 1979 TOTAL 40532.40 MEAN 111 MAX 2410 MIN 1.5 AC-FT 80400
WTR YR 1980 TOTAL 1864.51 MEAN 5.09 MAX 43 MIN .00 AC-FT 3700

06354860 SPRING CREEK NEAR HERREID, SD

LOCATION.--Lat 45°58'52", long 100°06'28", in SW¼ sec.13, T.127 N., R.77 W., Campbell County, Hydrologic Unit 10130102, on left bank 0.5 mi (0.8 km) upstream from county highway bridge, 2.4 mi (3.9 km) southwest of Herreid and 13.2 mi (21.2 km) upstream from high-water line of Lake Oahe.

DRAINAGE AREA.--440 mi² (1,140 km²), approximately, of which about 220 mi² (570 km²) is probabably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,653.80 ft (504.078 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. One observation of water temperature and specific conductance was made during the year.

AVERAGE DISCHARGE.--18 years, 9.10 ft³/s (0.258 m³/s) 6,590 acre-ft/yr (8.13 hm³/yr); median of yearly mean discharges, 4.2 ft³/s (0.12 m³/s), 3,000 acre-ft/yr (3.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,340 ft³/s (37.9 m³/s) Mar. 29, 1978, gage height, 11.49 ft (3.502 m); maximum gage height, 11.60 ft (3.536 m) Mar. 17, 1966; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.60 ft³/s (0.017 m³/s) Apr. 21, gage height, 3.36 ft (1.024 m), no peak above base of 40 ft³/s (1.13 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.26	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.22	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.18	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.38	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	1.40	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.047	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.38	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	2.8	.00	.00	.00	.00	.00

CAL YR 1979 TOTAL 469.35 MEAN 1.29 MAX 31 MIN .00 AC-FT 931
WTR YR 1980 TOTAL 1.40 MEAN .004 MAX .38 MIN .00 AC-FT 2.8

06354860 SPRING CREEK NEAR HERREID, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April to September 1978, October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
APR 09...	1500	.12	770	7.9	11.0	250	4	57	27	84

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
APR 09...	40	2.3	12	--	250	170	11	.2	14

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	CYANIDE TOTAL (MG/L AS CN) (00720)
APR 09...	526	.72	.17	.01	.210	.100	.08	.25	--

06354860 SPRING CREEK NEAR HERREID, SD--Continued

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                         00665     00916     00440     00910     00410     00940     00080     00900     00951     00666
  DATE   TIME DEPTH   PHOS-TOT   CALCIUM  HCO3 ION   CALCIUM     T ALK  CHLORIDE     COLOR  TOT HARD  FLUORIDE  PHOS-DIS
  FROM    OF                      CA-TOT      HCO3     CACO3     CACO3        CL     PT-CO     CACO3   F,TOTAL
   TO    DAY   FEET     MG/L P      MG/L      MG/L      MG/L      MG/L      MG/L     UNITS      MG/L      MG/L    MG/L P

78/04/26 09 30                                                                   5                                       -
         14 50           0.230                                         126
78/05/10 12 25           0.190                 222                     182                  35
78/06/06 09 30 0001                                                                      7
         14 30           0.150                 259                     212                  35
78/07/06 14 30 0001      0.630                 173                     142                  90
78/07/16 14 30                                                                           4
78/08/07 10 55           0.390                                         242               5
79/04/04 11 00 0000                 38.1                               184               8        60       169      0.60
79/05/10 11 00                      54.0                               216              10        45       223      0.50
80/04/09 15 00
CP(S)-6        0005      0.140      62.0                               270              11                 268
80/04/09 15 20

                         00671     00945     00515     00530     00076     01022     00610     00619     00680     00335
  DATE   TIME DEPTH   PHOS-DIS   SULFATE   RESIDUE   RESIDUE      TURB     BORON  NH3+NH4-  UN-IONZD   T ORG C       COD
  FROM    OF             ORTHO   SO4-TOT  DISS-105  TOT NFLT  TRBIDMTR     B,TOT   N TOTAL   NH3-NH3         C  LOWLEVEL
   TO    DAY   FEET     MG/L P      MG/L    C MG/L      MG/L  HACH FTU      UG/L      MG/L      MG/L      MG/L      MG/L

78/04/26 09 30                        78                  13
         14 50                                 296                 3.0                 0.010                11.0      31.0
78/05/10 12 25                                 368                 2.0                 0.010                 9.0      23.0
78/06/06 09 30 0001                  108                   3
         14 30                                 416                 1.0                 0.010                11.0      22.0
78/07/06 14 30 0001                            240                11.0                 0.030                14.0      34.0
78/07/16 14 30                        20                  17
78/08/07 10 55                        48       340         1      13.0                 0.010                10.0      29.0
79/04/04 11 00 0000                   78       350         2       1.4       150       0.020                12.0      28.0
79/05/10 11 00                        97       426         2       5.0       105       0.020                10.0      30.0
80/04/09 15 00
CP(S)-6        0005                  160       532         5       7.0       279       0.080
80/04/09 15 20

                         00620     00618     00613     00615     00625     00655     00678     01105     01002     01007
  DATE   TIME DEPTH      NO3-N     NO3-N     NO2-N     NO2-N  TOT KJEL  POLY PO4  PHOS-TOT  ALUMINUM   ARSENIC    BARIUM
  FROM    OF             TOTAL      DISS      DISS     TOTAL         N       PO4  HYD+ORTH    AL,TOT    AS,TOT    BA,TOT
   TO    DAY   FEET       MG/L      MG/L      MG/L      MG/L      MG/L      MG/L    MG/L P      UG/L      UG/L      UG/L

78/04/26 09 30                                                                                                 2        40
         14 50           0.000                                   0.700                0.22
78/05/10 12 25           0.000                                   0.700                0.19       100
78/06/06 09 30 0001                                                                                            4        30
         14 30           0.000                                   0.800                0.09
78/07/06 14 30 0001      0.000                                   1.300                           900
78/07/16 14 30                                                                                                 6        50
78/08/07 10 55           0.000                                   1.000                0.35                    10        40
79/04/04 11 00 0000      0.040                                   1.100      0.22      0.17       100           2        60
79/05/10 11 00           0.030                                                                   150           3        60
80/04/09 15 00
CP(S)-6        0005      0.010                                   1.400                           230           2
80/04/09 15 20
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Analyses by Corps of Engineers.
Tables from STORET.

06354860 SPRING CREEK NEAR HERREID, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
78/04/26	09 30		0.00									
	14 50			0	0	2		340	20			0.0
78/05/10	12 25			0	0	4		210	20			0.2
78/06/06	09 30	0001	0.00									
	14 30			1	0	3		70	30			0.0
78/07/06	14 30	0001		1	10	3		1100	20			0.4
78/07/16	14 30		0.00									
78/08/07	10 55		0.00	1	0	60			20			0.0
79/04/04	11 00	0000	0.00	1	0	4		250	30		17.9	0.0
79/05/10	11 00		0.00	4	0	1	5	240	54	41	21.0	0.0
80/04/09	15 00											
CP(S)-6		0005	0.00	5	0	26		297	0	89	24.0	0.0
80/04/09	15 20											

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
78/04/26	09 30				1	1.0					
	14 50			9				33			
78/05/10	12 25			0				0.4			
78/06/06	09 30	0001			0	1.0					
	14 30			10				4			
78/07/06	14 30	0001		10				8			
78/07/16	14 30				0	1.0					
78/08/07	10 55			4	0	0.0		2			
79/04/04	11 00	0000		0		0.0		7	11.00	48.00	193.0
79/05/10	11 00		0	0	1	0.0	0	2	13.00	60.00	196.0
80/04/09	15 00										
CP(S)-6		0005			0	1.0		36		88.00	165.0
80/04/09	15 20										

Analyses by Corps of Engineers.
Tables from STORET.

06355500 NORTH FORK GRAND RIVER NEAR WHITE BUTTE, SD

LOCATION.--Lat 45°47'39", long 102°21'59", in NE¼SE¼ sec.10, T.21 N., R.14 E., Perkins County, Hydrologic Unit 10130301, on right bank 1,400 ft (430 m) upstream from highway bridge and 9.8 mi (15.8 km) south of White Butte.

DRAINAGE AREA.--1,190 mi² (3,080 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1279: 1947, 1950.

GAGE.--Water-stage recorder. Altitude of gage is 2,275 ft (693 m), by barometer. See WSP 1917 for history of changes prior to June 12, 1951. June 12, 1951, to Aug. 20, 1975, water-stage recorder, and Aug. 21 to Sept. 10, 1975, nonrecording gage at site 1,300 ft (400 m) downstream; Sept. 11, 1975, to Mar. 22, 1976, nonrecording gage at present site, and Mar. 23 to July 28, 1976, nonrecording gage at site 1,400 ft (430 m) downstream, all at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Bowman-Haley Reservoir, capacity, 93,000 acre-ft (115 hm³), 71 mi (114 km) upstream, beginning August 1966. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--35 years, 56.0 ft³/s (1.586 m³/s), 40,570 acre-ft/yr (50.0 hm³/yr); median of yearly mean discharges, 33 ft³/s (0.93 m³/s), 23,900 acre-ft/yr (29 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,900 ft³/s (875 m³/s) Apr. 16, 1950, gage height, 20.0 ft (6.10 m), from floodmarks, from rating curve extended above 19,000 ft³/s (538 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 72 ft³/s (2.04 m³/s) June 15, gage height, 3.11 ft (0.948 m); no flow June 4-13, June 28 to Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	6.7	6.5	3.5	.75	.90	24	6.0	.10	.00	.00	.00
2	5.2	6.3	6.5	3.0	.80	.90	20	6.2	.07	.00	.00	.00
3	4.5	5.6	7.0	2.5	.85	.95	19	6.9	.02	.00	.00	.00
4	3.7	5.6	7.0	2.5	.90	.95	17	6.5	.00	.00	.00	.00
5	3.8	5.8	7.0	2.2	.95	.90	15	5.4	.00	.00	.00	.00
6	3.3	5.8	6.5	2.0	.95	.95	15	4.3	.00	.00	.00	.00
7	3.5	5.8	6.5	1.5	.95	1.0	15	3.7	.00	.00	.00	.00
8	3.1	6.0	6.5	1.3	.90	1.2	13	2.8	.00	.00	.00	.00
9	3.1	5.4	6.5	1.2	.90	1.5	12	2.8	.00	.00	.00	.00
10	3.2	4.7	6.5	1.3	.90	2.0	11	2.5	.00	.00	.00	.00
11	3.1	5.5	6.0	1.3	.85	3.0	10	2.0	.00	.00	.00	.00
12	3.1	6.1	6.0	1.5	.85	4.2	11	2.3	.00	.00	.00	.00
13	3.1	6.2	5.5	1.6	.82	4.5	8.8	1.8	.00	.00	.00	.00
14	3.4	6.6	5.5	1.6	.80	8.2	8.1	1.1	.10	.00	.00	.00
15	4.5	6.6	5.0	1.7	.80	7.6	9.7	.62	27	.00	.00	.00
16	4.3	6.6	4.0	1.7	.80	8.2	16	.72	3.2	.00	.00	.00
17	3.9	7.0	4.5	1.6	.85	9.2	18	.51	1.3	.00	.00	.00
18	4.4	7.0	5.5	1.6	.90	10	22	.78	.82	.00	.00	.00
19	4.9	7.0	5.5	1.5	.95	12	20	.71	.54	.00	.00	.00
20	4.7	7.4	5.5	1.6	.95	12	16	.46	.48	.00	.00	.00
21	4.9	7.0	5.0	1.6	.95	14	15	.68	.34	.00	.00	.00
22	5.4	6.5	5.0	1.7	.95	16	13	.55	.27	.00	.00	.00
23	5.4	6.5	4.5	1.7	.95	17	11	.37	.20	.00	.00	.00
24	5.3	6.5	4.5	1.6	.90	20	12	.21	.16	.00	.00	.00
25	5.2	6.5	4.0	1.0	.90	21	11	.12	.12	.00	.00	.00
26	5.4	6.0	4.0	.80	.95	25	10	.05	.06	.00	.00	.00
27	5.1	6.0	4.0	.75	1.0	25	8.5	.04	.02	.00	.00	.00
28	5.1	6.0	4.0	.70	1.0	28	9.0	.03	.00	.00	.00	.00
29	4.7	6.0	3.8	.70	.95	26	7.6	.03	.00	.00	.00	.00
30	6.0	6.5	3.7	.75	---	25	7.2	.03	.00	.00	.00	.00
31	7.0	---	3.5	.75	---	26	---	.04	---	.00	.00	---
TOTAL	138.2	187.2	165.5	48.75	25.97	333.15	404.9	60.25	34.80	.00	.00	.00
MEAN	4.46	6.24	5.34	1.57	.90	10.7	13.5	1.94	1.16	.000	.000	.000
MAX	7.0	7.4	7.0	3.5	1.0	28	24	6.9	27	.00	.00	.00
MIN	3.1	4.7	3.5	.70	.75	.90	7.2	.03	.00	.00	.00	.00
AC-FT	274	371	328	97	52	661	803	120	69	.00	.00	.00

CAL YR 1979 TOTAL 24059.51 MEAN 65.9 MAX 821 MIN .00 AC-FT 47720
WTR YR 1980 TOTAL 1398.72 MEAN 3.82 MAX 28 MIN .00 AC-FT 2770

06356000 SOUTH FORK GRAND RIVER AT BUFFALO, SD

LOCATION.--Lat 45°34'34", long 103°32'38", in SW¼ sec.29, T.19 N., R.5 E., Harding County, Hydrologic Unit 10130302, on right bank at downstream side of bridge on U.S. Highway 85, 0.3 mi (0.5 km) south of Buffalo.

DRAINAGE AREA.--148 mi² (383 km²).

PERIOD OF RECORD.--August 1955 to current year.

REVISED RECORDS.--WSP 1917: 1956-57. WRD SD-76-1: 1974(M), 1975.

GAGE.--Water-stage recorder. Datum of gage is 2,839.60 ft (865.510 m) National Geodetic Vertical Datum of 1929. Prior to May 5, 1970, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--25 years, 8.47 ft³/s (0.240 m³/s), 6,140 acre-ft/yr (7.57 hm³/yr); median of yearly mean discharges, 6.9 ft³/s (0.20 m³/s), 5,000 acre-ft/yr (6.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,780 ft³/s (78.7 m³/s) June 14, 1963, gage height, 9.01 ft (2.746 m), from rating curve extended above 550 ft³/s (15.6 m³/s) on basis of slope-area measurement of peak flow; no flow at times in 1956-58, 1960, 1962, 1965, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 reached a stage of 15.4 ft (4.69 m), from information by South Dakota Department of Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 57 ft³/s (1.61 m³/s) Aug. 28, gage height, 3.60 ft (1.097 m), no peak above base of 200 ft³/s (5.66 m³/s); minimum daily discharge, 0.85 ft³/s (0.024 m³/s) Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	2.8	2.8	1.3	1.3	3.2	7.0	3.1	2.7	1.4	.85	8.6
2	2.3	2.9	2.9	1.3	1.6	3.4	6.5	3.1	2.2	1.6	1.1	7.0
3	2.0	3.1	2.9	1.2	1.7	3.5	6.5	2.6	2.0	1.7	1.1	5.0
4	2.0	2.8	2.9	1.1	1.8	3.6	6.0	2.8	1.7	1.7	.99	4.0
5	2.2	2.8	2.9	1.1	1.8	3.6	5.5	2.6	3.3	1.6	.85	3.0
6	2.2	2.8	2.7	1.0	1.8	3.7	5.0	2.5	10	1.7	1.1	2.6
7	2.3	2.7	2.6	1.0	1.8	3.9	5.0	2.2	20	1.5	.98	2.3
8	2.5	2.6	2.5	1.1	1.8	4.0	4.3	2.1	22	1.2	1.3	2.0
9	2.8	2.8	2.4	1.1	1.7	4.0	3.9	2.1	7.7	1.6	3.4	1.9
10	2.9	2.9	2.2	1.1	1.7	4.0	3.8	2.5	4.0	1.7	11	1.7
11	2.6	3.0	2.0	1.1	1.7	4.2	3.6	2.1	2.5	1.2	1.7	1.9
12	2.5	2.9	2.0	1.2	1.6	4.5	3.1	2.1	2.1	1.1	4.4	2.1
13	2.6	2.8	2.0	1.3	1.6	5.0	3.2	2.2	2.0	1.2	2.6	1.9
14	2.6	2.8	1.9	1.4	1.5	5.5	3.0	2.2	2.4	1.4	1.9	2.1
15	2.6	2.9	1.7	1.3	1.4	6.0	2.9	2.1	9.1	1.4	2.8	2.1
16	3.1	2.9	1.5	1.2	1.3	6.0	3.2	2.2	4.4	1.4	7.5	2.2
17	2.9	2.9	1.2	1.2	1.4	6.0	2.9	2.3	2.9	1.3	5.9	2.1
18	2.9	2.9	1.4	1.2	1.6	5.5	3.0	2.4	2.3	1.3	3.4	2.1
19	2.9	2.8	1.6	1.1	1.8	5.5	2.5	2.2	4.1	1.4	3.4	2.6
20	2.9	2.6	1.6	1.2	1.9	5.5	2.4	2.1	12	1.1	2.8	2.1
21	2.8	2.5	1.5	1.2	2.1	5.5	2.3	1.9	7.5	.97	2.6	2.1
22	2.8	2.4	1.5	1.3	2.1	5.5	2.4	1.6	4.8	1.1	2.6	2.1
23	3.1	2.5	1.5	1.4	2.1	5.2	2.1	1.2	2.8	.93	5.5	2.2
24	3.0	2.7	1.4	1.5	2.0	6.0	2.2	1.3	2.0	.95	16	2.4
25	3.0	2.8	1.4	1.4	2.0	10	2.2	1.4	2.1	.91	23	2.4
26	3.3	2.8	1.3	1.3	2.2	11	2.2	1.3	1.9	1.3	7.9	2.6
27	2.9	2.9	1.2	1.1	2.9	12	2.3	1.2	3.0	1.3	6.1	2.4
28	2.9	2.8	1.2	1.0	3.4	11	2.8	2.7	1.8	.97	28	1.9
29	2.6	2.7	1.2	.90	3.6	10	2.6	1.9	1.6	.97	27	1.9
30	2.7	2.7	1.2	1.0	---	9.0	2.5	1.7	1.5	.88	9.4	1.7
31	2.7	---	1.2	1.1	---	8.0	---	2.2	---	.99	9.7	---
TOTAL	82.7	83.5	58.3	36.70	55.2	183.8	106.7	65.9	148.4	39.77	196.87	81.0
MEAN	2.67	2.78	1.88	1.18	1.90	5.93	3.56	2.13	4.95	1.28	6.35	2.70
MAX	3.3	3.1	2.9	1.5	3.6	12	7.0	3.1	22	1.7	28	8.6
MIN	2.0	2.4	1.2	.90	1.3	3.2	2.1	1.2	1.5	.88	.85	1.7
AC-FT	164	166	116	73	109	365	212	131	294	79	390	161

CAL YR 1979 TOTAL 2529.70 MEAN 6.93 MAX 177 MIN 1.1 AC-FT 5020
WTR YR 1980 TOTAL 1138.84 MEAN 3.11 MAX 28 MIN .85 AC-FT 2260

06356500 SOUTH FORK GRAND RIVER NEAR CASH, SD

LOCATION.--Lat 45°38'56", long 102°38'27", in SW¼SW¼ sec.34, T.20 N., R.12 E., Perkins County, Hydrologic Unit 10130302, on left bank at downstream side of highway bridge, 1.0 mi (1.6 km) upstream from Little Nasty Creek, 4.0 mi (6.4 km) north of Cash, 10 mi (16 km) south of Lodgepole, 12 mi (19 km) northwest of Bison, and 16 mi (26 km) downstream from Big Nasty Creek.

DRAINAGE AREA.--1,350 mi² (3,500 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 2,416 ft (736 m), by barometer. Prior to Oct. 25, 1946, nonrecording gage, and Oct. 25, 1946, to May 16, 1966, water-stage recorder, at site 500 ft (152 m) upstream. May 17, 1966, to May 2, 1968, nonrecording gage, at present site, all at same datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--35 years, 54.8 ft³/s (1.552 m³/s), 39,700 acre-ft/yr (49.0 hm³/yr); median of yearly mean discharges, 36 ft³/s (1.02 m³/s), 26,100 acre-ft/yr (32 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,000 ft³/s (765 m³/s) Apr. 15, 1950, gage height, 15.40 ft (4.694 m), from rating curve extended above 14,000 ft³/s (396 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 217 ft³/s (6.15 m³/s) Aug. 29, gage height, 2.58 ft (0.786 m); maximum gage height, 3.78 ft (1.152 m) Feb. 16 (backwater from ice), no peak above base of 500 ft³/s (14.2 m³/s); minimum daily discharge, 1.2 ft³/s (0.03 m³/s) Jan. 8-10.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 3 to Mar. 29)

0.90	0.84	1.1	3.1	1.3	9.2	1.5	21	2.0	91
1.0	1.6	1.2	5.8	1.4	14	1.7	43	2.5	214

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.5	12	7.0	3.3	1.8	4.5	42	12	9.0	5.1	3.0	31
2	8.9	12	7.5	3.0	2.0	4.0	39	13	9.1	7.2	2.7	30
3	8.5	11	7.5	2.5	2.1	4.0	33	13	7.7	6.4	2.4	19
4	7.8	12	7.5	2.2	2.1	4.5	32	13	6.8	6.1	2.8	14
5	8.9	13	7.5	2.0	2.3	4.5	31	13	5.8	6.0	2.7	12
6	7.2	13	7.0	1.5	2.3	5.0	29	13	6.1	6.5	2.2	11
7	7.5	12	7.0	1.3	2.3	5.0	28	12	9.2	5.5	2.5	7.5
8	8.5	12	6.5	1.2	2.2	5.0	27	11	10	5.0	1.8	7.4
9	9.2	12	6.5	1.2	2.2	5.0	26	10	13	6.0	1.5	6.8
10	9.7	13	6.5	1.2	2.2	5.5	24	11	31	6.5	2.7	6.6
11	7.8	13	6.0	1.3	2.1	5.5	21	10	32	4.5	67	5.0
12	8.2	12	6.0	1.4	2.0	6.1	21	11	20	4.0	109	6.6
13	8.2	12	6.0	1.5	2.0	7.0	20	11	14	4.5	44	6.1
14	8.5	12	5.5	1.5	1.9	7.0	20	9.9	15	5.0	18	6.5
15	9.7	11	5.0	1.4	1.8	8.0	17	9.8	16	5.0	12	8.8
16	9.2	11	4.5	1.4	1.9	8.0	21	9.5	14	5.0	11	8.8
17	11	10	5.0	1.4	2.0	7.5	22	9.5	14	4.5	9.4	8.9
18	11	10	5.5	1.4	2.5	7.5	18	9.6	25	5.0	32	8.7
19	11	11	5.5	1.3	3.0	7.0	17	9.4	14	4.5	16	9.1
20	11	12	5.5	1.4	2.9	7.0	16	9.0	15	4.0	10	8.8
21	12	11	5.0	1.4	2.7	7.0	16	8.9	16	4.0	7.0	9.5
22	12	10	5.0	1.5	2.5	6.5	15	7.9	20	3.5	5.6	8.9
23	12	10	4.5	1.7	2.5	6.5	13	7.5	18	3.5	5.8	9.1
24	13	9.0	4.5	1.9	2.5	7.0	13	7.4	14	3.5	5.5	9.1
25	13	8.0	4.0	1.9	3.0	15	13	5.6	11	4.0	4.7	9.3
26	13	7.5	4.0	1.7	3.5	30	13	6.2	8.5	4.5	11	8.9
27	13	7.5	4.0	1.5	4.0	35	13	5.7	8.5	4.5	30	8.5
28	13	7.0	4.0	1.3	4.2	40	13	6.0	7.8	5.0	30	8.6
29	13	7.0	3.7	1.3	4.5	45	13	7.3	5.3	4.5	101	8.7
30	13	7.0	3.5	1.4	---	42	12	7.1	5.2	3.6	52	8.6
31	13	---	3.5	1.5	---	53	---	7.3	---	3.0	44	---
TOTAL	320.3	320.0	170.7	50.5	73.0	404.6	638	296.6	401.0	149.9	649.3	311.8
MEAN	10.3	10.7	5.51	1.63	2.52	13.1	21.3	9.57	13.4	4.84	20.9	10.4
MAX	13	13	7.5	3.3	4.5	53	42	13	32	7.2	109	31
MIN	7.2	7.0	3.5	1.2	1.8	4.0	12	5.6	5.2	3.0	1.5	5.0
AC-FT	635	635	339	100	145	803	1270	588	795	297	1290	618

CAL YR 1979 TOTAL 17754.55 MEAN 48.6 MAX 731 MIN .00 AC-FT 35220
WTR YR 1980 TOTAL 3785.70 MEAN 10.3 MAX 109 MIN 1.2 AC-FT 7510

06357000 SHADEHILL RESERVOIR AT SHADEHILL, SD

LOCATION.--Lat 45°45'12", long 102°12'12", in E½ sec.25, T.21 N., R.15 E., Perkins County, Hydrologic Unit 10130302, at dam on Grand River, 1.3 mi (2.1 km) southwest of Shadehill.

DRAINAGE AREA.--3,120 m^2 (8,080 km^2), approximately.

PERIOD OF RECORD.--June 1950 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Apr. 3, 1952, occasional elevations obtained by level circuits and Apr. 3, 1952, to Apr. 28, 1970, nonrecording gage at same site and datum.

REMARKS.--Reservoir formed by earthfill dam. Storage began July 1, 1950; dam completed August 1951. Conservation storage, 81,443 acre-ft (100 hm^3) between elevations 2,250.8 ft (686.04 m), invert of canal and river outlet, and elevation 2,272.0 ft (692.51 m), crest of morning-glory spillway. Dead storage, 58,231 acre-ft (71.8 hm^3) below elevation 2,250.8 ft (686.04 m). Flood control, 217,708 acre-ft (268 hm^3) between elevations 2,272.0 ft (692.51 m) and 2,302.0 ft (701.65 m), crest of emergency spillway. Surcharge, 111,203 acre-ft (137 hm^3) at elevation 2,312.0 ft (704.70 m), maximum pool elevation. Total reservoir capacity is 468,585 acre-ft (578 hm^3) at elevation 2,312.0 ft (704.70 m). The reservoir provides flood control and water for irrigation purposes. Figures given herein represent usable contents above elevation 2,250.8 ft (686.04 m). Prior to Oct. 1, 1968, reservoir contents published as total contents and included dead storage.

COOPERATION.--Records of elevations and contents furnished by Water and Power Resources Service.

EXTREMES FOR PERIOD OF RECORD.--Maximum usable contents observed, 259,900 acre-ft (320 hm^3) Apr. 10, 1952, elevation, 2,297.86 ft (700.388 m); minimum usable observed since first filling to spillway level, 25,950 acre-ft (32.0 hm^3) Mar. 17, 1962, elevation, 2,258.90 ft (688.51 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 64,119 acre-ft (79.1 hm^3) Oct. 1, elevation, 2,268.31 ft (691.381 m); minimum, 33,336 acre-ft (41.1 hm^3) Sept. 30, elevation, 2,260.90 ft (689.122 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation	Contents	Change in contents
Sept. 30	2268.36	64345	
Oct. 31	2265.03	49832	-14513
Nov. 30	2264.82	48954	-878
Dec. 31	2264.62	48120	-834
CAL YR 1979			-9028
Jan. 31	2264.32	46878	-1242
Feb. 29	2264.02	45644	-1234
Mar. 31	2264.11	46013	+369
Apr. 30	2264.39	47167	+1154
May 31	2263.62	44011	-3156
June 30	2263.35	42919	-1092
July 31	2262.20	38347	-4572
Aug. 31	2261.47	35515	-2832
Sept. 30	2260.90	33336	-2179
WTR YR 1980			-31009

06357500 GRAND RIVER AT SHADEHILL, SD

LOCATION.--Lat 45°45'25", long 102°11'41", in NW¼NW¼ sec.30, T.21 N., R.16 E., Perkins County, Hydrologic Unit 10130303, on left bank 0.2 mi (0.3 km) downstream from Shadehill Dam, 1.1 mi (1.8 km) southwest of Shadehill, and 12.0 mi (19.3 km) southwest of Lemmon.

DRAINAGE AREA.--3,120 mi² (8,080 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1943 to current year. Records for July 1904 to October 1906 collected at site 4 mi (6 km) upstream and published as "at Seim" in WSP 130, 172, and 208 have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1279: 1943(M). See also Period of Record.

GAGE.--Water-stage recorder. Datum of gage is 2,192.48 ft (668.268 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 31, 1947, nonrecording gage, and Aug. 31, 1947, to Oct. 24, 1958, water-stage recorder at site 0.8 mi (1.3 km) downstream at datum 6.02 ft (1.835 m) lower.

REMARKS.--Records good except those for winter periods, which are fair. Flow completely regulated by Shadehill Reservoir since July 1, 1950. (See station 06357000.)

AVERAGE DISCHARGE.--37 years, 117 ft³/s (3.313 m³/s), 84,770 acre-ft/yr (105 hm³/yr); median of yearly mean discharges, 66 ft³/s (1.87 m³/s), 47,800 acre-ft/yr (59 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,000 ft³/s (1,640 m³/s) Apr. 16, 1950, gage height, 21.0 ft (6.40 m), from floodmarks upstream from bridge; 19.06 ft (5.809 m), from floodmark in gage well, unreliable, site and datum then in use; no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 356 ft³/s (10.1 m³/s) Oct. 13; maximum gage height, 4.98 ft (1.518 m) June 4; minimum daily discharge, 13 ft³/s (0.37 m³/s) Mar. 21, 22.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-5, 23-31, July 28 to Sept. 22; stage-discharge relation affected by ice Nov. 28, 29, Dec. 8, 11-13, 15-18, Jan. 6 to Feb. 22, Mar. 2-14)

2.6	9.2	3.2	63	4.0	232
2.8	20	3.5	115	4.5	414
3.0	39				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	112	21	20	15	20	19	24	22	33	23	35	35
2	112	21	20	15	20	19	23	21	33	24	36	35
3	112	21	19	16	21	19	24	21	34	24	35	30
4	111	21	18	15	21	19	25	21	72	25	34	24
5	232	21	17	15	21	20	25	21	26	25	34	24
6	343	21	17	15	20	20	24	21	22	24	35	24
7	342	20	19	15	20	20	24	22	22	25	36	23
8	341	21	18	15	20	20	23	25	21	26	35	23
9	335	21	16	15	20	20	24	27	21	27	36	23
10	329	21	17	16	20	20	26	29	22	27	35	23
11	327	21	17	18	20	20	26	30	22	25	35	23
12	338	21	18	20	20	20	26	32	22	25	35	23
13	356	21	20	22	19	20	27	32	22	25	35	23
14	354	21	23	23	19	20	27	33	22	25	35	23
15	349	21	22	23	18	20	27	33	22	25	36	23
16	348	21	21	23	18	19	28	34	22	25	36	23
17	346	21	22	23	19	18	26	33	22	26	35	20
18	342	21	23	22	20	19	26	34	23	26	35	17
19	338	21	23	22	20	19	26	35	24	27	35	16
20	334	22	20	23	19	16	26	35	23	28	36	16
21	336	22	17	23	18	13	26	33	23	27	36	16
22	206	22	16	23	18	13	26	32	23	27	36	16
23	83	21	15	23	16	14	26	33	23	31	36	15
24	83	21	15	22	17	15	26	32	23	37	36	16
25	83	21	15	20	18	15	26	32	23	38	36	16
26	83	20	15	19	18	16	27	32	24	37	36	16
27	81	20	15	18	18	19	25	32	23	37	37	16
28	81	20	15	18	18	20	24	32	23	39	36	15
29	81	20	15	19	20	23	23	33	23	38	36	15
30	83	21	15	20	---	22	23	34	23	35	35	15
31	54	---	15	20	---	23	---	33	---	35	35	---
TOTAL	7055	628	558	596	556	580	759	919	761	888	1099	627
MEAN	228	20.9	18.0	19.2	19.2	18.7	25.3	29.6	25.4	28.6	35.5	20.9
MAX	356	22	23	23	21	23	28	35	72	39	37	35
MIN	54	20	15	15	16	13	23	21	21	23	34	15
AC-FT	13990	1250	1110	1180	1100	1150	1510	1820	1510	1760	2180	1240

CAL YR 1979 TOTAL 37324 MEAN 102 MAX 714 MIN 14 AC-FT 74030
WTR YR 1980 TOTAL 15026 MEAN 41.1 MAX 356 MIN 13 AC-FT 29800

06357500 GRAND RIVER AT SHADEHILL, SD--Continued

WATER-QUALITY RECORDS

LOCATION.--Prior to October 1977, samples collected at site 0.2 mi (0.3 km) upstream.

PERIOD OF RECORD.--Water years 1952, 1954-68, 1977 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: March 1953 to September 1965.
WATER TEMPERATURES: August 1954 to September 1959, October 1966 to September 1968.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,780 micromhos Mar. 1, 2, 14, 16, 19, 1962; minimum daily, 427 micromhos Apr. 27, 1955.
WATER TEMPERATURES: Maximum, 26.0°C Aug. 3, 1955; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)
OCT 24...	0845	82	1550	7.8	10.0	230	0	41	31	280
JAN 15...	0810	23	1870	8.7	.0	240	0	42	33	300
APR 08...	1450	23	1550	9.3	7.5	220	0	39	30	300
MAY 06...	1600	20	1740	8.8	17.0	230	0	41	32	310
JUL 30...	1330	37	1750	8.4	24.0	250	0	43	34	340
SEP 16...	1530	21	1850	8.3	20.0	230	0	35	34	320

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
OCT 24...	72	8.0	8.7	290	280	540	8.3	.3	5.1
JAN 15...	72	8.4	6.2	310	300	590	6.7	.4	5.0
APR 08...	74	8.8	8.6	--	280	530	6.6	.3	4.6
MAY 06...	73	8.8	9.1	--	310	590	6.2	.3	4.2
JUL 30...	74	9.4	11	--	340	620	6.8	.6	4.8
SEP 16...	74	9.2	10	--	330	550	7.5	.2	4.7

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS PO4) (00660)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT 24...	1080	1.47	240	.37	.010	.010	.01	.03	--
JAN 15...	1170	1.59	73.9	.23	.040	.030	.01	.03	--
APR 08...	1090	1.48	67.7	.26	.040	.020	.03	.09	--
MAY 06...	1180	1.60	64.4	.13	.020	.010	.00	.00	--
JUL 30...	1270	1.73	128	.10	.030	.010	.01	.03	--
SEP 16...	1160	1.58	68.3	.07	.010	.010	.00	.00	--

06357800 GRAND RIVER AT LITTLE EAGLE, SD

LOCATION.--Lat 45°39'28", long 100°49'04", in NE¼NE¼ sec.32, T.20 N., R.27 E., Corson County, Hydrologic Unit 10130303, on left bank at downstream side of bridge on State Highway 63, 1.3 mi (2.1 km) southwest of Little Eagle and 4.7 mi (7.6 km) downstream from Little Oak Creek.

DRAINAGE AREA.--5,370 mi² (13,910 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,628.63 ft (496.406 m) National Geodetic Vertical Datum of 1929. Prior to May 12, 1959, nonrecording gage, and May 12, 1959, to Aug. 11, 1970, water-stage recorder at site 0.6 mi (1.0 km) downstream at datum 2.00 ft (0.610 m) lower.

REMARKS.--Records good except those for winter period or no gage-height record, which are poor. Flow regulated by Shadehill Reservoir 144 mi (232 km) upstream. (See station 06357000.)

AVERAGE DISCHARGE.--22 years, 237 ft³/s (6.712 m³/s), 171,700 acre-ft/yr (212 hm³/yr); median of yearly mean discharges, 190 ft³/s (5.38 m³/s), 138,000 acre-ft/yr (170 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,000 ft³/s (538 m³/s) Mar. 23, 1978; maximum gage height, 21.76 ft (6.632 m) Mar. 18, 1966, from floodmarks, ice jam, site and datum then in use; no flow at times in 1958-62, 1969, 1975, 1977-80.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,810 ft³/s (79.6 m³/s) June 7, gage height, 7.04 ft (2.146 m); maximum gage height, 8.73 ft (2.661 m) Jan. 25 (backwater from ice); no flow Jan. 26 to Feb. 21.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 24 to Sept. 6, Sept. 27-30; stage-discharge relation affected by ice Nov. 7 to Mar. 27)

Oct. 1 to Mar. 11				Mar. 12 to Sept. 30			
3.0	38	2.3	0.30	2.8	20	4.5	556
3.2	78	2.4	1.4	3.0	43	5.0	880
3.5	150	2.5	3.5	3.2	78	6.0	1,720
4.0	312	2.6	7.1	3.5	150	7.0	2,770
4.5	556	2.7	12	4.0	312		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	156	102	21	16	.00	2.0	107	33	15	25	.90	25
2	124	98	22	15	.00	3.0	109	31	15	16	.95	20
3	111	95	24	14	.00	4.5	138	32	18	25	.95	17
4	109	90	24	14	.00	7.0	140	30	360	27	1.0	15
5	101	71	25	12	.00	13	134	28	444	22	1.0	13
6	96	46	25	10	.00	15	175	26	462	20	1.0	13
7	93	22	25	8.0	.00	18	214	26	1950	18	1.0	12
8	138	21	24	6.0	.00	20	213	24	727	15	1.2	11
9	292	20	24	4.0	.00	21	167	23	373	13	1.5	11
10	305	20	24	2.9	.00	22	142	21	252	12	2.0	11
11	308	20	23	2.0	.00	22	106	21	185	11	1.9	10
12	308	21	21	1.5	.00	22	88	20	140	11	1.5	10
13	310	22	21	1.0	.00	21	75	19	113	10	2.0	10
14	314	22	20	.80	.00	20	84	18	101	9.0	3.0	10
15	323	23	20	.70	.00	20	60	18	97	9.0	3.5	10
16	334	23	21	.60	.00	19	57	19	100	8.0	9.3	9.8
17	337	23	23	.50	.00	19	62	19	131	8.0	23	9.7
18	342	23	25	.35	.00	18	117	19	148	8.0	32	9.2
19	346	23	26	.25	.00	18	160	18	101	7.5	29	9.2
20	346	22	26	.20	.00	19	133	13	71	7.0	31	9.7
21	346	22	25	.10	.00	25	88	13	59	7.0	57	9.2
22	346	22	22	.06	.02	30	68	13	49	6.5	57	9.2
23	348	21	20	.04	.10	50	56	13	40	6.0	57	9.1
24	350	21	19	.03	.25	80	51	13	38	6.0	59	9.8
25	263	21	18	.02	.35	150	48	13	38	10	59	11
26	159	21	18	.00	.50	200	43	13	35	15	61	11
27	129	20	18	.00	.80	280	41	13	34	24	78	9.9
28	118	20	18	.00	1.0	312	38	14	29	3.1	59	8.6
29	111	20	17	.00	1.5	273	37	15	27	1.4	45	7.7
30	108	21	17	.00	---	280	35	15	25	.94	35	6.8
31	105	---	17	.00	---	292	---	15	---	.90	30	---
TOTAL	7176	1016	673	110.05	4.52	2295.5	2986	608	6177	362.34	744.70	337.9
MEAN	231	33.9	21.7	3.55	.16	74.0	99.5	19.6	206	11.7	24.0	11.3
MAX	350	102	26	16	1.5	312	214	33	1950	27	78	25
MIN	93	20	17	.00	.00	2.0	35	13	15	.90	.90	6.8
AC-FT	14230	2020	1330	218	9.0	4550	5920	1210	12250	719	1480	670

CAL YR 1979 TOTAL 81163.70 MEAN 222 MAX 1720 MIN .00 AC-FT 161000
WTR YR 1980 TOTAL 22491.01 MEAN 61.5 MAX 1950 MIN .00 AC-FT 44610

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued
(National stream-quality accounting network station)
(National pesticide water-monitoring network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956, 1969, 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to September 1976, October 1977 to September 1978.
WATER TEMPERATURES: October 1975 to September 1978.
SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1976 (discontinued).

REMARKS.--No flow Jan. 26 to Feb. 21.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,100 micromhos Dec. 4, 7-9, 1976; minimum daily, 290 micromhos Feb. 7, 1976.
WATER TEMPERATURES: Maximum daily, 33.0°C Aug. 26, 1976; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 19,000 mg/L May 2, 1972; minimum daily mean, 0 mg/L Jan. 10, 11, Feb. 5-10, 1975.
SEDIMENT LOADS: Maximum daily, 259,000 tons (235,000 tonnes) Mar. 12, 1972; minimum daily, 0 ton (0 tonne) Jan. 10, 11, Feb. 5-10, 1975.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
12...	0920	308	550	9.3	2.5	52	11.2	340	290	230	0	42
NOV												
07...	0830	22	1900	8.4	.0	8.6	14.0	K4	K7	300	0	58
DEC												
06...	1030	26	2450	8.7	.0	6.4	14.3	K3	60	370	0	70
JAN												
10...	1200	2.9	330	8.2	.0	5.5	18.6	40	14	580	0	110
MAR												
05...	0845	13	2720	8.1	.0	2.5	12.8	K3	K17	380	0	69
APR												
09...	1250	180	950	8.0	9.5	78	13.2	K17	K95	130	0	26
MAY												
05...	1430	29	2200	8.2	23.0	48	8.9	170	160	300	0	61
JUN												
04...	0900	17	2700	8.6	17.5	12	7.9	23	180	310	0	53
JUL												
02...	0900	16	2080	8.3	19.0	58	8.0	135	165	280	0	58
30...	0830	.94	2450	8.0	20.0	68	6.6	730	780	370	58	78
SEP												
16...	0825	9.9	1850	8.4	10.5	90	9.2	170	130	240	0	55

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT												
12...	31	280	71	8.0	10	290	290	570	5.9	.4	4.4	1130
NOV												
07...	37	330	82	8.3	9.5	340	340	690	15	.3	3.6	1270
DEC												
06...	48	400	69	9.0	11	410	420	770	15	.4	4.1	1580
JAN												
10...	74	650	71	12	9.9	660	740	1200	28	.5	5.9	2420
MAR												
05...	51	520	74	12	15	540	460	1000	17	.5	7.6	1930
APR												
09...	16	150	70	5.7	4.9	--	160	260	6.1	.2	7.3	558
MAY												
05...	35	360	72	9.1	11	--	350	730	14	.4	1.1	1450
JUN												
04...	44	500	77	12	13	--	370	970	21	.3	4.4	1830
JUL												
02...	34	380	73	9.8	14	--	330	710	15	.5	5.7	1500
30...	42	470	72	11	18	--	310	990	9.9	.5	4.0	1840
SEP												
16...	26	360	75	10	10	--	320	650	16	.4	7.3	1310

K Non-ideal colony count.

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT												
12...	1120	1.54	940	--	.37	.12	.01	.01	.03	.04	.47	.62
NOV												
07...	1350	1.73	75.4	--	.07	.07	.09	.12	.07	.08	.54	.67
DEC												
06...	1570	2.15	111	--	.10	.11	.01	.01	.03	.04	.89	.59
JAN												
10...	2520	3.29	18.9	--	.28	.30	.08	.10	.08	.10	1.0	1.3
MAR												
05...	1960	2.62	67.7	--	.24	.24	.06	.08	.06	.07	1.1	.94
APR												
09...	580	.76	2.71	--	.06	.06	.00	.00	.12	.15	.68	.67
MAY												
05...	1420	1.97	112	110	.04	.00	.01	.01	.10	.12	.95	.83
JUN												
04...	1830	2.49	85.0	4	.05	.05	.04	.05	.10	.12	1.3	.76
JUL												
02...	1420	2.04	65.6	41	.07	.04	.36	.46	.00	.00	2.1	1.4
30...	1800	2.50	4.67	66	.00	.00	.00	.00	.15	.18	1.1	1.4
SEP												
16...	1320	1.78	35.0	132	.00	.00	.00	.00	.00	.00	.90	1.4

DATE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, ORTHOPHOSPHATE TOTAL (MG/L AS P) (70507)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P) (00673)	PHOSPHORUS, HYDRO. + ORTHO DISSOL. (MG/L AS P) (00677)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)
OCT											
12...	.48	.17	.65	.85	.77	3.4	--	--	--	.010	.070
NOV											
07...	.63	.11	.74	.70	.81	3.6	--	--	--	.020	.020
DEC											
06...	.90	.00	.62	1.0	.73	3.2	--	--	--	.010	.010
JAN											
10...	1.1	.30	1.4	1.4	1.7	7.5	--	--	--	.030	.040
MAR											
05...	1.2	.00	1.0	1.4	1.2	5.5	--	--	--	.010	.020
APR											
09...	.68	.11	.79	.74	.85	3.8	--	--	--	.030	.130
MAY											
05...	.96	.00	.93	1.0	.93	4.1	.01	--	--	.010	.060
JUN											
04...	1.3	.00	.86	1.4	.91	4.0	.02	--	--	.020	.040
JUL											
02...	2.5	.00	1.4	2.6	1.4	6.4	.01	--	--	.030	.040
30...	1.1	.40	1.5	1.1	1.5	6.6	.07	--	--	.020	.210
SEP											
16...	.90	.50	1.4	.90	1.4	6.2	.00	--	--	.040	.080

DATE	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, ORTHOPHOSPHATE TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70958)	BIOMASS CHLOROPHYLL RATIO PERIPHYTON (UNITS) (70950)
OCT											
12...	.21	--	12	.3	--	--	--	--	--	--	--
NOV											
07...	.03	--	--	--	17	--	--	--	--	--	--
DEC											
06...	.03	--	--	--	12	300	--	--	--	--	--
JAN											
10...	.12	--	34	--	--	--	--	--	--	--	--
MAR											
05...	.06	--	--	--	33	--	--	--	--	--	--
APR											
09...	.40	--	15	1.5	--	340	--	--	--	--	--
MAY											
05...	.18	.03	--	--	19	15000	--	--	--	--	--
JUN											
04...	.12	.06	--	--	16	17000	.315	.236	.030	.000	2633
JUL											
02...	.12	.03	16	.3	--	18000	.157	.079	.000	.000	--
30...	.64	.21	--	--	23	17000	8.74	7.48	.760	.040	1658
SEP											
16...	.25	.00	--	--	14	--	--	--	--	--	--

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT												
12...	0920	308	247	205	93	--	--	--	--	--	--	--
NOV												
07...	0830	22	144	8.6	90	--	--	--	--	--	--	--
DEC												
06...	1030	26	177	12	--	--	--	--	90	95	100	--
JAN												
10...	1200	2.9	370	2.9	--	--	--	--	89	99	100	--
MAR												
05...	0845	13	168	5.9	89	--	--	--	--	--	--	--
APR												
09...	1250	180	173	.84	91	--	--	--	--	--	--	--
MAY												
05...	1430	29	220	17	93	--	--	--	95	100	--	--
JUN												
04...	0900	17	151	7.0	90	--	--	--	--	--	--	--
JUL												
02...	0900	16	--	--	--	--	--	--	--	--	--	--
30...	0830	.94	233	.59	87	--	--	--	93	100	--	--
SEP												
16...	0825	9.9	254	6.8	94	--	--	--	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) (01026)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)
OCT											
12...	0920	2	1	1	0	0	<1	10	0	10	0
JAN											
10...	1200	1	0	1	0	0	0	0	0	0	2
APR											
09...	1250	2	1	1	2	0	2	0	0	0	2
JUL											
02...	0900	2	1	1	0	0	0	0	0	0	1

DATE	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)
OCT											
12...	0	<3	4	2	2	2800	20	2	2	0	80
JAN											
10...	2	0	2	1	1	180	20	7	5	2	80
APR											
09...	0	<3	9	0	9	3800	590	4	1	3	100
JUL											
02...	0	1	12	6	6	1900	110	10	10	0	170

DATE	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY DISSOLVED (UG/L AS HG) (71890)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
OCT											
12...	80	1	1.4	.6	.8	1	0	1	10	7	<3
JAN											
10...	10	70	.1	.1	.0	1	0	1	30	20	10
APR											
09...	60	40	.2	.2	.0	1	1	0	40	0	40
JUL											
02...	160	10	.1	.1	.0	1	0	1	60	40	20

< Less than.

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL (UG/L) (39350)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)
NOV											
07...	0830	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	DIAZINON, TOTAL (UG/L) (39570)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DIELDRIN TOTAL (UG/L) (39380)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)
NOV											
07...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL TRITHION, TOTAL (UG/L) (39790)
NOV										
07...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	PARATHION, TOTAL (UG/L) (39540)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)
NOV										
07...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND Not detected.

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 9,79	SEP 6,79	DEC 6,79	APR 9,80
TIME	1000	0830	1030	1250
TOTAL CELLS/ML	3300	210	300	340
DIVERSITY: DIVISION	1.0	1.2	1.6	0.6
.CLASS	1.0	1.3	1.6	0.6
..ORDER	1.5	1.6	2.0	1.2
...FAMILY	2.1	2.2	2.1	3.3
....GENUS	2.7	0.0	2.1	3.3

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	--	-
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	--	-	85#	41	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	460	14	5	2	45	15	15	4
....DICTYOSPHAERIUM	540#	16	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-
....OOCYSTIS	310	9	45#	22	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-
....SCENEDESMUS	770#	23	--	-	--	-	5	1
..TETRASPORALES								
...COCCOMYXACEAE								
....ELAKATOTHRIX	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	390	12	--	-	45	15	20	6
....PLATYMONAS	--	-	5	2	--	-	--	-
..ZYGNEMATALES								
...DESMIDIACEAE								
....COSMARIUM	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	15	7	20	7	35	10
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	--	-	5	1
...CYMBELLACEAE								
....CYMBELLA	--	-	--	-	--	-	50	15
...DIATOMACEAE								
....DIATOMA	--	-	--	-	--	-	35	10
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	--	-	5	1
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	--	-	5	2	65#	19
...NAVICULACEAE								
....NAVICULA	--	-	--	-	--	-	35	10
...NITZSCHIACEAE								
....NITZSCHIA	150	5	10	5	20	7	35	10
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	30	9
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...CHROMULINACEAE								
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-
...COCCOLITHOPHORIDACEAE	--	-	5	2	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 9,79		SEP 6,79		DEC 6,79		APR 9,80	
TIME	1000		0830		1030		1250	
TOTAL CELLS/ML	3300		210		300		340	
DIVERSITY: DIVISION	1.0		1.2		1.6		0.6	
.CLASS	1.0		1.3		1.6		0.6	
..ORDER	1.5		1.6		2.0		1.2	
...FAMILY	2.1		2.2		2.1		3.3	
....GENUS	2.7		0.0		2.1		3.3	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	10	3	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	700#	21	--	-	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	35#	17	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	--	-	--	-	160#	52	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..GYMNODINIALES								
...GYMNODINIACEAE								
....GYMNODINIUM	--	-	--	-	--	-	5	1
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

GRAND RIVER BASIN

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE TIME	MAY 5,80 1430	JUN 4,80 0900	JUL 2,80 0845	JUL 30,80 0830
TOTAL CELLS/ML	15000	17000	18000	17000
DIVERSITY: DIVISION	1.1	1.1	1.0	1.5
.CLASS	1.5	1.1	1.0	1.5
..ORDER	1.9	1.2	1.5	1.7
...FAMILY	2.0	1.4	2.2	2.2
....GENUS	2.5	2.5	3.0	2.6

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	100	1
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	200	1	--	-
....MICRACTINIUM	140	1	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	4800#	32	4800#	28	5800#	32	4700#	28
....DICTYOSPHAERIUM	--	-	5800#	34	1600	9	500	3
....KIRCHNERIELLA	970	6	*	0	--	-	--	-
....OOCYSTIS	1200	8	1600	9	910	5	1100	7
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	3600#	20	--	-
....CRUCIGENIA	--	-	--	-	--	-	300	2
....SCENEDESMUS	--	-	490	3	1200	7	800	5
..TETRASPORALES								
...COCCOMYXACEAE								
....ELAKATOTHRIX	--	-	--	-	300	2	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	280	2	--	-	200	1	100	1
....PLATYMONAS	--	-	--	-	--	-	--	-
..ZYGNEMATALES								
...DESMIDIACEAE								
....COSMARIUM	--	-	--	-	--	-	100	1
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	1100	7	--	-	710	4	400	2
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	*	0	--	-	--	-
...CYMBELLACEAE								
....CYMBELLA	--	-	--	-	--	-	--	-
...DIATOMACEAE								
....DIATOMA	--	-	--	-	--	-	--	-
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	*	0	--	-	400	2
...NITZSCHIACEAE								
....NITZSCHIA	4000#	27	1100	6	400	2	3200#	19
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...CHROMULINACEAE								
....CHRYSOCOCCUS	2100	14	160	1	--	-	--	-
...COCCOLITHOPHORIDACEAE								
	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	MAY 5,80		JUN 4,80		JUL 2,80		JUL 30,80	
TIME	1430		0900		0845		0830	
TOTAL CELLS/ML	15000		17000		18000		17000	
DIVERSITY: DIVISION	1.1		1.1		1.0		1.5	
.CLASS	1.5		1.1		1.0		1.5	
..ORDER	1.9		1.2		1.5		1.7	
...FAMILY	2.0		1.4		2.2		2.2	
....GENUS	2.5		2.5		3.0		2.6	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	280	2	330	2	2300	13	5100#	30
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	1000	5	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	2600#	15	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..GYMNODINIALES								
...GYMNODINIACEAE								
....GYMNODINIUM	--	-	--	-	--	-	--	-
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	*	0	100	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	610	---	---	---	---	3380	1020	2550	2450	1590	2800	---
2	850	---	---	---	---	2820	990	2550	2450	2080	---	---
3	540	---	---	---	---	3150	---	2350	---	2050	---	---
4	560	---	---	---	---	2680	1900	2350	2700	1200	2250	---
5	570	---	2250	---	---	2720	---	2200	---	---	---	---
6	650	1800	2450	---	---	1130	---	---	1360	1720	1950	---
7	540	1900	---	---	---	---	1900	2470	735	2180	2800	---
8	---	1200	2400	---	---	---	1750	2470	780	1680	---	---
9	820	700	---	---	---	---	950	2460	870	---	2900	1440
10	---	1800	2250	330	---	1050	870	---	970	---	2800	1490
11	---	1900	1800	---	---	2230	---	2480	---	---	2850	---
12	550	1950	---	---	---	1200	---	2470	---	---	2950	1690
13	1650	1380	2700	---	---	1910	---	2480	1360	---	1750	2260
14	1650	1950	---	---	---	1160	830	2470	---	2420	2100	---
15	1650	2000	---	---	---	1030	1360	2450	1340	2400	2200	2450
16	1650	2000	---	---	---	---	---	2470	---	---	---	1650
17	1650	1900	2500	---	---	---	1440	2500	1600	2420	---	---
18	1650	2400	2700	---	---	1050	---	2480	1570	1900	2400	---
19	1650	1950	2500	---	---	1150	1750	2470	---	---	---	1710
20	1650	1950	---	---	---	1160	---	2470	1650	1480	1360	---
21	---	1950	---	---	---	1180	880	2470	---	2500	---	1520
22	---	2600	2100	---	2720	1190	1460	2500	---	2520	---	---
23	1620	2000	---	---	---	---	1700	2480	---	---	---	2300
24	---	2000	2200	---	---	1180	1850	---	---	---	---	---
25	---	---	---	---	---	---	1500	---	---	---	---	---
26	---	2400	---	---	4500	1150	---	2500	---	---	---	---
27	1650	2000	---	---	---	1200	---	2470	---	2390	1410	---
28	---	1950	2500	---	3390	1040	1550	2470	1750	2100	---	---
29	1650	2000	---	---	---	1110	---	2480	---	2400	2500	---
30	---	---	---	---	---	---	---	2480	1940	2450	---	1720
31	1700	---	---	---	---	1030	---	2450	---	---	---	---
MEAN	1210	1900	2360	330	3540	1600	1390	2460	1570	2080	2330	1640

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.0	---	---	---		---	---	---	---	---	---	---
2	7.5	---	---	---		---	---	---	---	19.0	---	---
3	10.0	---	---	---		---	---	---	---	---	---	---
4	7.0	---	---	---		---	---	---	17.5	---	---	---
5	9.0	---	---	---		.0	---	23.0	---	---	---	---
6	13.0	---	.0	---		---	---	---	---	---	---	---
7	11.0	.0	---	.0		---	---	---	---	---	---	---
8	8.0	---	---	.0		---	---	---	---	---	---	---
9	7.0	---	.0	.0		---	6.5	---	---	---	---	---
10	6.0	---	.0	.0		1.0	---	---	---	---	---	---
11	11.5	---	.0	.0		1.5	---	---	---	---	---	---
12	7.5	---	.0	.0		1.0	---	---	---	---	---	---
13	4.0	---	.0	---		1.0	---	---	---	---	---	---
14	---	---	.0	.0		2.0	---	---	---	---	---	---
15	---	---	.0	.0		2.0	---	---	---	---	---	---
16	---	---	.0	.0		---	---	---	---	---	---	10.5
17	---	---	.0	.0		2.5	---	---	---	---	---	---
18	---	---	.0	.0		2.0	---	---	---	---	---	---
19	---	---	.0	.0		1.0	---	---	---	---	---	---
20	---	---	.0	---		2.5	---	---	---	---	---	---
21	---	---	.0	.0		---	---	---	---	---	---	---
22	---	---	.0	.0		3.0	---	---	---	---	---	---
23	---	---	.0	.0		---	---	---	---	---	---	---
24	---	---	.0	.0		2.0	---	---	---	---	---	---
25	---	---	.0	.0		3.0	---	---	---	---	---	---
26	---	---	.0	---		1.0	---	---	---	---	---	---
27	---	---	.0	---		---	---	---	---	---	14.5	---
28	---	---	.0	---		3.0	---	---	---	---	---	---
29	---	---	.0	---		4.0	---	---	---	---	---	---
30	---	---	---	---		---	---	---	---	20.0	---	---
31	---	---	.0	---		5.0	---	---	---	---	---	---
MEAN	8.5	.0	.0	.0		2.0	6.5	23.0	17.5	19.5	14.5	10.5

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440 HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
78/04/25	10 00											
	11 30	0001										0.020
78/05/16	10 30	0001							160			
78/06/05	11 15	0001							70			
78/07/12	11 30	0001							35			
78/08/10	10 00								55			
78/09/14	11 45	0001							25		0.20	0.000
78/10/17	10 20	0001							35			0.010
79/04/06	11 00								30			
79/05/09	11 00								120			
79/06/06	11 00								35			
79/07/11	11 00								30			
79/08/09	11 00								25			
79/10/12	11 00								40			
									15			

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
78/04/25	10 00			0.33	0.000							
	11 30	0001								1870		
78/06/05	11 15	0001				0.000				5000		
78/07/12	11 30	0001				0.000				11500		
78/08/10	10 00				0.000					1100		40
78/09/14	11 45	0001				0.000				3850		
78/10/17	10 20	0001				0.000				1100		
79/04/06	11 00					0.000				42500		
79/05/09	11 00					0.000						
79/06/06	11 00					0.000						
79/07/11	11 00					0.000						
79/08/09	11 00					0.000						
79/09/06	11 00					0.000						
79/10/12	11 00					0.000						

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515 RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
78/04/25	10 00		0.010									
	11 30	0001				1300		157				
78/05/16	10 30	0001				396		210				
78/06/05	11 15	0001				148		334				24.0
78/07/12	11 30	0001	0.000			226		308				32.0
78/08/10	10 00		0.000			36		410	0.010			17.0
78/09/14	11 45	0001	0.000			86		395				24.0
78/10/17	10 20	0001	0.000			31		341				25.0
79/04/06	11 00		0.000			720		210				49.0
79/05/09	11 00		0.000			66		333				31.0
79/06/06	11 00		0.000			4		436				13.0
79/07/11	11 00		0.010			119		443				25.0
79/08/09	11 00		0.000			163		410				29.0
79/09/06	11 00		0.000			244		0.3				36.0
79/10/12	11 00		0.000			120		390				21.0

Analyses by Corps of Engineers.
Tables from STORET.

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
78/04/25	11 30	0001	1.00							54		0.0
78/05/16	10 30	0001	0.00							49		0.0
78/06/05	11 15	0001	0.00							50		0.0
78/07/12	11 30	0001	0.00							51		0.0
78/08/10	10 00		1.00					980		48		0.0
78/09/14	11 45	0001	0.00									0.0
78/10/17	10 20	0001	0.00							44		0.0
79/04/06	11 00		0.00							55		0.0
79/05/09	11 00		0.00							44		0.0
79/06/06	11 00		1.00							71		0.0
79/07/11	11 00		2.00							70		0.4
79/08/09	11 00		1.00							80		0.8
79/09/06	11 00		0.00							41		0.8
79/10/12	11 00		0.00							35		2.3

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
78/04/25	11 30	0001	0	82							
78/05/16	10 30	0001	0	50							
78/06/05	11 15	0001	0	20							
78/07/12	11 30	0001	0	30							
78/08/10	10 00					1.0	0				
78/09/14	11 45	0001	0								
78/10/17	10 20	0001	0	13							
79/04/06	11 00		0	50							
79/05/09	11 00		0	0							
	11 00										
CP(S)-G		0005				0.0					
79/05/09	12 00										
79/06/06	11 00		20	1							
79/07/11	11 00		20	13							
79/08/09	11 00		60	22							
79/09/06	11 00		0	53							
79/10/12	11 00		14	17							

Analyses by Corps of Engineers.
Tables from STORET.

06359500 MOREAU RIVER NEAR FAITH, SD

LOCATION.--Lat 45°11'52", long 102°09'22", in NW¼NW¼ sec.10, T.14 N., R.16 E., Perkins County, Hydrologic Unit 10130306, on left bank 10 ft (3 m) downstream from bridge on State Highway 73, 3.1 mi (5.0 km) downstream from Rabbit Creek and 13.5 mi (21.7 km) northwest of Faith.

DRAINAGE AREA.--2,660 mi² (6,890 km²), approximately.

PERIOD OF RECORD.--March 1943 to current year.

REVISED RECORDS.--WSP 1176: 1944. WSP 1279: 1946(M).

GAGE.--Water-stage recorder. Datum of gage is 2,238.68 ft (682.350 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 5, 1949, nonrecording gage 0.3 mi (0.5 km) upstream and Oct. 5, 1949, to July 16, 1959, nonrecording gage and crest-stage gage at present site; both at datum 1.0 ft (0.30 m) higher. July 17, 1959, to Sept. 1, 1971, recording gage at site 500 ft (152 m) downstream at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--37 years, 135 ft³/s (3.823 m³/s), 97,810 acre-ft/yr (121 hm³/yr); median of yearly mean discharges, 95 ft³/s (2.69 m³/s), 68,800 acre-ft/yr (85 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,000 ft³/s (736 m³/s) Apr. 9, 1944, gage height, 20.9 ft (6.37 m), from floodmarks, site and datum then in use, from rating curve extended above 12,000 ft³/s (340 m³/s) on basis of slope-area measurement of peak flow; no flow at times in 1944, 1946, 1948-51, 1955-66, 1968-71, 1974-75, 1978-79.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,460 ft³/s (41.3 m³/s) June 16, gage height, 6.82 ft (2.079 m), no peak above base of 1,500 ft³/s (42.5 m³/s); no flow Jan. 28 to Mar. 8, July 23 to Aug. 23.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 3, Nov. 6 to Mar. 25)

1.4	0	1.7	5.1	2.2	40	3.5	236
1.5	.40	1.8	10	2.5	71	4.0	357
1.6	1.8	2.0	24	3.0	141	5.0	665

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	10	6.0	2.5	.00	.00	48	6.1	2.8	2.7	.00	3.9
2	2.4	9.5	6.5	2.0	.00	.00	43	5.3	3.9	1.3	.00	2.5
3	2.4	9.5	7.0	1.5	.00	.00	39	5.9	3.9	2.4	.00	1.4
4	2.1	10	7.0	1.0	.00	.00	35	5.8	3.2	1.8	.00	3.3
5	2.4	8.5	7.0	.90	.00	.00	34	6.6	2.9	1.4	.00	4.8
6	2.1	8.5	6.5	.70	.00	.00	30	6.4	6.1	23	.00	4.2
7	2.1	8.5	6.5	.60	.00	.00	29	12	12	19	.00	4.2
8	2.4	8.0	6.0	.45	.00	.00	26	7.5	13	8.3	.00	4.4
9	2.7	8.5	6.0	.40	.00	.50	24	6.8	14	4.5	.00	4.7
10	3.1	9.0	5.5	.40	.00	2.0	22	6.1	11	2.5	.00	4.0
11	2.7	9.5	5.5	.45	.00	5.5	20	5.8	11	1.7	.00	3.5
12	3.1	10	5.5	.50	.00	10	19	5.7	10	1.9	.00	3.7
13	3.4	10	5.0	.50	.00	12	18	5.8	15	2.6	.00	3.3
14	3.4	11	5.0	.50	.00	15	17	5.7	6.1	1.8	.00	2.9
15	4.1	12	4.5	.50	.00	15	15	5.5	25	1.7	.00	2.4
16	4.1	12	4.0	.50	.00	14	19	5.3	532	1.2	.00	2.3
17	5.1	12	4.5	.45	.00	14	22	4.8	535	1.0	.00	2.2
18	4.7	11	4.8	.45	.00	13	18	5.0	172	.56	.00	1.9
19	6.1	11	5.0	.45	.00	13	17	4.8	90	.37	.00	1.6
20	7.2	10	5.0	.45	.00	15	15	4.4	61	.27	.00	1.2
21	8.2	9.5	4.5	.45	.00	25	13	4.2	40	.12	.00	.96
22	9.3	9.0	4.5	.40	.00	50	11	3.7	27	.05	.00	.78
23	9.6	8.5	4.5	.40	.00	100	10	3.1	19	.00	.00	.61
24	9.1	8.0	4.0	.40	.00	150	9.5	2.9	11	.00	62	.60
25	9.1	7.5	4.0	.35	.00	180	8.2	1.9	11	.00	39	.47
26	8.9	7.0	4.0	.25	.00	195	7.9	1.1	10	.00	14	.34
27	8.4	6.5	3.5	.10	.00	178	7.8	1.1	7.2	.00	7.5	.38
28	8.7	6.0	3.5	.00	.00	157	7.2	1.1	2.7	.00	4.0	.34
29	8.8	6.0	3.5	.00	.00	122	6.9	.64	4.4	.00	2.5	.31
30	8.9	6.0	3.5	.00	---	87	6.4	.58	2.7	.00	1.6	.21
31	9.2	---	3.0	.00	---	60	---	.98	---	.00	1.5	---
TOTAL	166.2	272.5	155.3	17.55	.00	1433.00	597.9	142.60	1664.9	80.17	132.10	67.40
MEAN	5.36	9.08	5.01	.57	.000	46.2	19.9	4.60	55.5	2.59	4.26	2.25
MAX	9.6	12	7.0	2.5	.00	195	48	12	535	23	62	4.8
MIN	2.1	6.0	3.0	.00	.00	.00	6.4	.58	2.7	.00	.00	.21
AC-FT	330	541	308	35	.00	2840	1190	283	3300	159	262	134

CAL YR 1979 TOTAL 34628.40 MEAN 94.9 MAX 2330 MIN .00 AC-FT 68690
WTR YR 1980 TOTAL 4729.62 MEAN 12.9 MAX 535 MIN .00 AC-FT 9380

06360500 MOREAU RIVER NEAR WHITEHORSE, SD

LOCATION.--Lat 45°15'21", long 100°50'33", in SW¼SE¼ sec.17, T.15 N., R.27 E., Dewey County, Hydrologic Unit 10130306, on left bank 30 ft (9 m) downstream from bridge, 2.4 mi (3.9 km) southeast of Whitehorse, 8.8 mi (14.2 km) downstream from Little Moreau River, and 16.3 mi (26.2 km) southeast of town of Timber Lake.

DRAINAGE AREA.--4,880 mi² (12,640 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1954 to current year.

REVISED RECORDS.--WRD SD-78-1: 1977.

GAGE.--Water-stage recorder. Datum of gage is 1,661.48 ft (506.419 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 24, 1954, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. U.S. Weather Bureau gage-height telemeter at station.

AVERAGE DISCHARGE.--26 years, 198 ft³/s (5.607 m³/s), 143,500 acre-ft/yr (177 hm³/yr); median of yearly mean discharges, 130 ft³/s (3.68 m³/s), 94,200 acre-ft/yr (120 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,600 ft³/s (725 m³/s) Mar. 24, 1978, gage height, 25.31 ft (7.714 m); maximum gage height, 26.20 ft (7.986 m) Mar. 14, 1972 (backwater from ice); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1953 reached a stage of about 26.2 ft (7.99 m). Flood in March 1947 was probably higher.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 333 ft³/s (9.43 m³/s) Mar. 28, gage height, 2.87 ft (0.875 m); maximum gage height, 5.34 ft (1.628 m) Jan. 9 (backwater from ice), no peak above base of 1,800 ft³/s (51.0 m³/s); no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 11 to Nov. 17; stage-discharge relation affected by ice Nov. 18 to Mar. 24)

0.60	0	0.80	2.4	1.0	9.9	1.3	32	2.0	134
.70	.50	.90	5.6	1.1	15	1.5	56	3.0	367

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	.00	6.5	3.0	.00	.00	73	6.5	.00	5.0	.00	.00
2	2.0	.00	6.5	2.0	.00	.00	71	5.6	.00	3.6	.00	.00
3	1.0	.00	6.5	1.0	.00	.00	69	5.0	.15	3.2	.00	.00
4	.50	.00	7.0	.50	.00	.00	71	4.4	18	2.7	.00	.00
5	.25	.00	7.5	.10	.00	.00	61	3.9	7.3	1.9	.00	.00
6	.10	.00	8.0	.00	.00	.00	54	3.2	5.0	.62	.00	.00
7	.00	.00	8.0	.00	.00	.00	49	2.5	3.0	.11	.00	.00
8	.00	.00	8.0	.00	.00	.00	44	2.3	2.0	.21	.00	.00
9	.00	.00	7.5	.00	.00	.00	41	2.2	1.8	.44	.00	.00
10	.00	.00	7.0	.00	.00	.25	37	2.2	1.4	.44	.00	.00
11	.00	.00	6.5	.00	.00	.70	32	2.2	.88	.52	.00	.00
12	.00	.00	6.0	.00	.00	1.5	29	2.1	.50	.24	.00	.00
13	.00	.00	6.0	.00	.00	4.5	26	1.6	.88	.01	.00	.00
14	.00	.00	5.5	.00	.00	7.0	21	2.4	.50	.00	.00	.00
15	.00	.00	5.0	.00	.00	10	19	2.7	.50	.00	.00	.00
16	.00	.00	4.5	.00	.00	12	18	2.7	.50	.00	.00	.00
17	.00	.00	4.5	.00	.00	14	15	2.7	.50	.00	.00	.00
18	.00	.10	4.0	.00	.00	15	15	2.7	.50	.00	.00	.00
19	.00	.50	4.0	.00	.00	15	15	2.3	.40	.00	.00	.00
20	.00	1.0	4.5	.00	.00	14	14	2.0	247	.00	.00	.00
21	.00	1.5	5.0	.00	.00	13	32	1.7	190	.00	.00	.00
22	.00	2.5	5.0	.00	.00	12	26	1.6	130	.00	.00	.00
23	.00	5.0	5.0	.00	.00	13	15	1.1	92	.00	.00	.00
24	.00	7.0	5.0	.00	.00	15	13	.53	64	.00	.00	.00
25	.00	9.0	4.5	.00	.00	34	11	.21	45	.00	.00	.00
26	.00	9.5	4.5	.00	.00	138	10	.01	31	.00	.00	.00
27	.00	9.0	4.5	.00	.00	159	10	.00	21	.00	.00	.00
28	.00	7.5	4.0	.00	.00	152	8.9	.00	15	.00	.00	.00
29	.00	7.0	4.0	.00	.00	103	8.0	.00	10	.00	.00	.00
30	.00	7.0	4.0	.00	---	100	7.5	.00	7.9	.00	.00	.00
31	.00	---	3.5	.00	---	88	---	.00	---	.00	.00	---
TOTAL	6.85	66.60	172.0	6.60	.00	920.95	915.4	66.35	896.71	18.99	.00	.00
MEAN	.22	2.22	5.55	.21	.000	29.7	30.5	2.14	29.9	.61	.000	.000
MAX	3.0	9.5	8.0	3.0	.00	159	73	6.5	247	5.0	.00	.00
MIN	.00	.00	3.5	.00	.00	.00	7.5	.00	.00	.00	.00	.00
AC-FT	14	132	341	13	.00	1830	1820	132	1780	38	.00	.00

CAL YR 1979 TOTAL 52860.75 MEAN 145 MAX 2240 MIN .00 AC-FT 104600
WTR YR 1980 TOTAL 3070.45 MEAN 8.39 MAX 247 MIN .00 AC-FT 6090

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969, 1972-76, 1978 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: October 1970 to September 1976 (discontinued).

REMARKS.--No flow Oct. 7 to Nov. 17, Jan. 6 to Mar. 9, May 27 to June 2, July 14 to Sept. 30. Sediment-discharge records prior to Oct. 1, 1971, on file in the District office, Corps of Engineers, Omaha, NE.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 20,300 mg/L May 9, 1972; minimum daily mean, 0 mg/L on many days most years.
SEDIMENT LOADS: Maximum daily, 420,000 tons (381,000 tonnes) May 10, 1975; minimum daily, 0 ton (0 tonne) on many days each year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)
DEC 06...	1130	7.9	3600	8.9	.0	19	13.9	K18	50	610	290	150
APR 09...	0850	38	1600	9.5	9.5	84	12.0	K40	K60	120	0	29
MAY 05...	1130	3.9	2300	8.6	19.0	2.9	8.6	120	50	260	0	59
JUL 01...	1115	5.6	1410	9.4	21.8	58	9.3	40	120	66	0	16

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)
DEC 06...	56	580	77	10	9.1	590	320	1400	26	.3	3.1	2470
APR 09...	12	330	85	13	6.7	--	320	460	10	.4	4.6	1050
MAY 05...	27	470	79	13	11	--	320	900	17	.3	.6	1660
JUL 01...	6.3	310	90	17	9.5	--	230	480	14	2.6	6.5	945

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
DEC 06...	2420	3.36	52.7	--	.05	.01	.01	.01	.16	.19	1.1	.94
APR 09...	1050	1.43	107	--	.02	.01	.00	.00	.15	.18	.57	.64
MAY 05...	1680	2.26	17.6	36	.02	.00	.01	.01	.11	.13	.68	.89
JUL 01...	983	1.29	14.3	80	.00	.03	.00	.00	.10	.12	.40	2.0

K Non-ideal colony count.

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	PHOS-PHORUS, HYDRO. + ORTHO DISSOL. (MG/L AS P) (00677)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
DEC 06...	1.1	.00	1.1	1.2	1.1	4.9	--	--	--	.010	.030
APR 09...	.57	.22	.79	.59	.80	3.5	--	--	--	.020	.130
MAY 05...	.69	.31	1.0	.71	1.0	4.4	.01	--	--	.020	.070
JUL 01...	.40	1.7	2.1	.40	2.1	9.4	--	.00	.00	.000	.100

DATE	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)
DEC 06...	.09	--	--	--	12	5400	--	--	--	--	--
APR 09...	.40	--	--	--	--	1500	--	--	--	--	--
MAY 05...	.21	.03	--	--	26	44000	2.91	2.68	.050	.020	4600
JUL 01...	.31	--	24	1.2	--	200000	--	--	--	--	--

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
DEC 06...	1130	7.9	360	7.7	--	--	--	--	75	78	99	100
APR 09...	0850	38	270	27	--	80	--	92	95	--	--	--
MAY 05...	1130	3.9	99	1.1	87	--	--	--	--	--	--	--
JUL 01...	1115	5.6	123	1.9	74	--	--	--	--	--	--	--

06360500 MOREAU RIVER NEAR WHITEHORSE,SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
APR											
09...	0850	2	1	1	1	0	1	0	0	0	2
JUL											
01...	1115	4	0	4	0	--	<1	0	0	0	2

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
APR											
09...	0	<3	19	0	19	3500	370	3	0	3	140
JUL											
01...	--	<3	21	12	9	2000	50	12	12	0	110

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
APR											
09...	120	20	.2	.0	.2	1	0	1	60	0	60
JUL											
01...	110	5	.1	.0	.1	5	0	5	30	20	10

< Less than.

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 8,79		SEP 6,79		DEC 6,79		APR 9,80		MAY 5,80		JUL 1,80	
TIME	1040		1235		1130		0850		1130		1100	
TOTAL CELLS/ML	10000		35000		5400		1500		44000		200000	
DIVERSITY: DIVISION	1.2		1.1		1.3		1.2		1.1		1.1	
.CLASS	1.2		1.1		1.3		1.2		1.1		1.1	
..ORDER	1.5		1.4		1.5		1.5		1.1		1.4	
...FAMILY	1.8		2.2		1.7		1.8		1.3		2.0	
....GENUS	2.1		2.6		2.0		1.8		1.9		2.4	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	1100	3	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-	*	0
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	7200#	21	2900#	53	27	2	16000#	36	5200	3
....CHLORELLA	--	-	260	1	150	3	14	1	--	-	--	-
....CHODATELLA	--	-	--	-	49	1	--	-	--	-	*	0
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	6000	14	81000#	41
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	380	1	--	-
....OOCYSTIS	520	5	790	2	--	-	--	-	380	1	*	0
....TREUBARIA	--	-	--	-	--	-	--	-	*	0	--	-
....WESTELLA	520	5	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	4200	12	98	2	--	-	1500	3	10000	5
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	1300	1
....SCENEDESMUS	2600#	26	3200	9	98	2	27	2	380	1	9000	5
....TETRASTRUM	520	5	--	-	--	-	--	-	--	-	1300	1
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	260	3	*	0	98	2	--	-	--	-	*	0
..ZYGNEMATALES												
...DESMIDIACEAE												
....STAURASTRUM	--	-	*	0	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	*	0	340	6	250#	17	--	-	*	0
..PENNALES												
...NAVICULACEAE												
....NAVICULA	--	-	--	-	--	-	120	8	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	130	1	--	-	240	5	160	11	--	-	2300	1
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	570	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	2100	6	--	-	--	-	--	-	--	-
....ANACYSTIS	260	3	--	-	--	-	--	-	--	-	11000	6
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENOPSIS	--	-	1300	4	--	-	--	-	--	-	64000#	33
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	19000#	43	--	-
....OSCILLATORIA	5200#	51	--	-	--	-	--	-	--	-	5200	3
....SCHIZOTHRIX	--	-	14000#	39	--	-	--	-	--	-	--	-
....SPIRULINA	--	-	*	0	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	1600	1
....EUTREPTIA	--	-	*	0	--	-	--	-	--	-	--	-
....PHACUS	--	-	260	1	--	-	--	-	--	-	--	-
....TRACHELOMONAS	130	1	--	-	1500#	27	890#	60	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--Continued

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                        00665     00916     00440     00910     00410     00940     00080     00900     00951     00666
  DATE   TIME DEPTH  PHOS-TOT   CALCIUM  HCO3 ION   CALCIUM     T ALK  CHLORIDE     COLOR  TOT HARD  FLUORIDE  PHOS-DIS
  FROM    OF                     CA-TOT      HCO3     CACO3     CACO3        CL     PT-CO     CACO3   F,TOTAL
   TO    DAY  FEET     MG/L P      MG/L      MG/L      MG/L      MG/L      MG/L     UNITS      MG/L      MG/L    MG/L P

77/10/25 11 00 0001     0.030      42.0
78/04/26 10 00                     29.0                                                 140                         0.030
78/05/17 10 10 0001                                                                      45
78/07/13 09 30 0001     1.140      44.0                                                  35                0.40
78/08/08 09 30 0001                                                                      35
78/10/13 10 30 0001                                                                      35
79/04/06 11 00 0000                                                                      45
79/05/10 11 00                                                                           30
79/07/11 11 00 0000                                                                      45
79/08/08 11 00                                                                           50

                        00620     00618     00613     00615     00625     00655     00678     01105     01002     01007
  DATE   TIME DEPTH     NO3-N     NO3-N     NO2-N     NO2-N  TOT KJEL  POLY PO4  PHOS-TOT  ALUMINUM   ARSENIC    BARIUM
  FROM    OF            TOTAL      DISS      DISS     TOTAL         N       PO4  HYD+ORTH    AL,TOT    AS,TOT    BA,TOT
   TO    DAY  FEET       MG/L      MG/L      MG/L      MG/L      MG/L      MG/L    MG/L P      UG/L      UG/L      UG/L

77/10/25 11 00 0001     0.270                                    1.200                0.35     41600        10       210
78/04/26 10 00          0.150                         0.000
         10 30 0001                                                                            75000
78/05/17 10 10 0001                                   0.000
78/07/13 09 30 0001     0.480                         0.000     2.800                 1.14    145000        29       130
78/08/08 09 30 0001                                   0.000
78/10/13 10 30 0001                                   0.010                                      900
79/04/06 11 00 0000                                   0.000                                    45000
79/05/10 11 00                                        0.000
79/07/11 11 00 0000                                   0.000
79/08/08 11 00                                        0.000

                        00671     00945     00515     00530     00076     01022     00610     00619     00680     00335
  DATE   TIME DEPTH  PHOS-DIS   SULFATE   RESIDUE   RESIDUE      TURB     BORON  NH3+NH4-  UN-IONZD   T ORG C       COD
  FROM    OF            ORTHO   SO4-TOT  DISS-105  TOT NFLT  TRBIDMTR     B,TOT   N TOTAL   NH3-NH3         C  LOWLEVEL
   TO    DAY  FEET     MG/L P      MG/L    C MG/L      MG/L  HACH FTU      UG/L      MG/L      MG/L      MG/L      MG/L

77/10/25 11 00 0001     0.010                 636       550                 110     0.020                10.0      33.0
78/04/26 10 00          0.000                 390      2790                  83     0.160                         125.0
78/05/17 10 10 0001                                    1876                  70                                    92.0
78/07/13 09 30 0001     0.000                 776      2593                 180     0.080                19.0     108.0
78/08/08 09 30 0001                 470                  50                 197                                    24.0
78/10/13 10 30 0001     0.000                            20                 322                                    29.0
79/04/06 11 00 0000     0.010                           730                 150                                    15.0
79/05/10 11 00          0.000                            60                  46                                    23.0
79/07/11 11 00 0000     0.000                            60                 237                                    37.0
79/08/08 11 00          0.000                           346                 200                                    36.0

                        01012     01027     01034     01042     01037     01045     01051     01132     00927     71900
  DATE   TIME DEPTH  BERYLIUM   CADMIUM  CHROMIUM    COPPER    COBALT      IRON      LEAD   LITHIUM   MGNSIUM   MERCURY
  FROM    OF           BE,TOT    CD,TOT    CR,TOT    CU,TOT  CO,TOTAL    FE,TOT    PB,TOT    LI,TOT    MG,TOT  HG,TOTAL
   TO    DAY  FEET       UG/L      UG/L      UG/L      UG/L      UG/L      UG/L      UG/L      UG/L      MG/L      UG/L

77/10/25 11 00 0001      1.00         2        50        36        18                  50       104                 0.0
78/04/26 10 00                                                                                           10.0       0.2
         10 30 0001      3.00                                                                    96
78/05/17 10 10 0001      2.00                                                                   112                 0.0
78/07/13 09 30 0001      4.00         6       200        96        46                 130       200      21.0       0.3
78/08/08 09 30 0001      1.00                                                                   100                 2.3
78/10/13 10 30 0001      0.00                                                                   180                 0.0
79/04/06 11 00 0000      0.00                                                                   120                 0.0
79/05/10 11 00           0.00                                                                   139                 1.8
79/07/11 11 00 0000      1.00                                                                   170                 0.5
79/08/08 11 00           1.00                                                                    80                 7.4

                        01062     01067     01147     01077     01087     01092     00937     00929     01055
  DATE   TIME DEPTH      MOLY    NICKEL  SELENIUM    SILVER  VANADIUM      ZINC   PTSSIUM    SODIUM  MANGNESE
  FROM    OF           MO,TOT  NI,TOTAL    SE,TOT    AG,TOT     V,TOT    ZN,TOT     K,TOT    NA,TOT        MN
   TO    DAY  FEET       UG/L      UG/L      UG/L      UG/L      UG/L      UG/L      MG/L      MG/L      UG/L

77/10/25 11 00 0001                                     1.0        60       107              120.00
78/04/26 10 00              0       140                                                       72.00
         10 30 0001         0       140
78/05/17 10 10 0001         0       100
78/07/13 09 30 0001                                     4.0       280       300              124.00
78/08/08 09 30 0001         0        11
78/10/13 10 30 0001         0        20
79/04/06 11 00 0000         0        50
79/05/10 11 00              0         0
79/07/11 11 00 0000        20        20
79/08/08 11 00              0        30
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Analyses by Corps of Engineers.
Tables from STORET.

06392900 BEAVER CREEK AT MALLO CAMP, NEAR FOUR CORNERS, WY

LOCATION.--Lat 44°05'04", long 104°03'41", in NE¼NE¼ sec.4, T.47 N., R.60 W., Weston County, Hydrologic Unit 10120107, between Forest Service Road 811 and right bank at Mallo Campgrounds, 300 ft (91 m) upstream from mouth, 800 ft (244 m) upstream from dam on Stockade Beaver Creek, and 3.8 mi (6.1 km) east of Four Corners.

DRAINAGE AREA.--10.3 mi² (26.7 km²).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,030 ft (1,840 m), from topographic map.

REMARKS.--Records fair except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--6 years, 1.90 ft³/s (0.054 m³/s), 1,380 acre-ft/yr (1.70 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21 ft³/s (0.59 m³/s) Apr. 26, 1975, gage height, 5.40 ft (1.646 m); minimum daily, 0.23 ft³/s (0.007 m³/s) Oct. 14, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5.7 ft³/s (0.16 m³/s) Apr. 22, gage height, 4.66 ft (1.420 m), no peak above base of 10 ft³/s (0.28 m³/s); minimum discharge observed, 1.1 ft³/s (0.03 m³/s) Jan. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	1.9	1.9	2.0	1.9	2.2	2.7	2.8	3.8	2.4	2.5	2.3
2	2.5	1.8	2.1	2.1	2.0	2.2	2.7	2.6	3.8	2.6	2.5	2.3
3	2.5	1.8	2.3	2.1	2.0	2.3	2.7	2.6	4.1	2.8	2.5	2.4
4	2.4	1.8	2.3	2.2	2.1	2.2	2.7	2.6	4.3	2.6	2.5	2.4
5	2.4	1.8	2.3	2.2	2.3	2.1	2.7	2.6	4.2	2.5	2.5	2.4
6	2.4	1.7	2.3	2.1	2.3	2.2	2.6	2.6	3.9	2.4	2.5	2.5
7	2.4	1.7	2.3	2.0	2.3	2.1	2.6	2.6	4.0	2.2	2.5	2.3
8	2.4	1.7	2.3	1.8	2.3	2.1	2.5	2.6	4.1	2.0	2.5	2.3
9	2.5	1.7	2.3	1.7	2.3	2.0	2.5	2.7	3.9	2.0	2.5	2.2
10	2.5	1.7	2.3	1.8	2.3	2.0	2.6	2.9	4.0	1.6	2.7	2.0
11	2.5	1.7	1.9	2.0	2.5	2.2	2.5	2.8	3.8	2.4	2.6	2.1
12	2.4	1.9	2.0	2.0	2.5	2.3	2.5	2.5	3.9	3.5	2.5	2.1
13	2.3	1.8	2.3	2.0	2.5	2.4	2.6	2.6	3.7	3.7	2.4	2.1
14	2.3	1.8	2.5	2.0	2.5	2.4	2.7	2.5	3.7	3.2	2.4	2.2
15	2.2	1.6	2.3	1.9	2.5	2.5	2.7	2.8	4.4	3.0	2.4	2.2
16	2.2	1.6	1.6	1.8	2.3	2.5	2.8	2.8	3.7	3.3	3.0	2.2
17	2.2	1.6	2.5	1.8	2.4	2.5	2.8	2.9	3.2	3.5	2.7	2.2
18	2.2	1.6	2.5	1.7	2.5	2.6	2.9	2.9	2.9	3.4	2.6	2.2
19	2.2	1.6	2.4	1.7	2.5	2.6	3.0	3.0	3.1	3.0	2.4	2.2
20	2.2	1.5	2.4	1.7	2.4	2.6	3.1	3.0	3.5	1.7	2.4	2.1
21	2.2	1.5	2.5	1.8	2.3	2.5	3.1	3.0	4.2	2.3	2.3	2.0
22	2.2	1.4	2.5	1.8	2.3	2.2	3.4	2.9	3.4	2.3	2.3	2.0
23	2.2	1.3	2.4	1.8	2.3	2.3	3.0	3.3	3.9	2.3	2.3	2.0
24	2.0	1.3	2.3	1.6	2.3	2.3	2.9	3.3	5.3	2.4	2.3	1.9
25	2.0	1.4	2.3	1.5	2.7	2.3	2.9	3.5	5.4	2.5	2.3	1.9
26	2.0	1.4	2.2	1.3	2.4	2.3	2.9	3.5	5.6	2.5	2.3	2.2
27	2.0	1.5	2.1	1.2	2.3	2.4	2.9	3.5	5.2	2.5	2.3	2.2
28	2.0	1.2	2.1	1.1	2.3	2.5	2.9	3.5	4.8	2.5	2.3	2.2
29	2.0	1.3	2.0	1.2	2.3	2.5	2.9	3.9	4.3	2.5	2.3	2.3
30	1.9	1.6	1.9	1.3	---	2.6	2.9	3.7	3.4	2.4	2.4	2.3
31	1.9	---	1.9	1.6	---	2.6	---	3.6	---	2.5	2.3	---
TOTAL	69.6	48.2	69.0	54.8	67.6	72.5	83.7	92.1	121.5	80.5	76.0	65.7
MEAN	2.25	1.61	2.23	1.77	2.33	2.34	2.79	2.97	4.05	2.60	2.45	2.19
MAX	2.5	1.9	2.5	2.2	2.7	2.6	3.4	3.9	5.6	3.7	3.0	2.5
MIN	1.9	1.2	1.6	1.1	1.9	2.0	2.5	2.5	2.9	1.6	2.3	1.9
AC-FT	138	96	137	109	134	144	166	183	241	160	151	130

CAL YR 1979 TOTAL 941.6 MEAN 2.58 MAX 4.2 MIN 1.2 AC-FT 1870
WTR YR 1980 TOTAL 901.2 MEAN 2.46 MAX 5.6 MIN 1.1 AC-FT 1790

06392950 STOCKADE BEAVER CREEK NEAR NEWCASTLE, WY

LOCATION.--Lat 43°51'30", long 104°06'23", in SW¼SE¼ sec.19, T.45 N., R.60 W., Weston County, Hydrologic Unit 10120107, on left bank at downstream side of bridge on county highway 0.6 mi (1.0 km) upstream from South Draw, 2.5 mi (4.0 km) upstream of LAK Reservoir Dam, and 4.7 mi (7.6 km) east of Newcastle.

DRAINAGE AREA.--107 mi² (277 km²).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,455 ft (1,358 m), from topographic map.

REMARKS.--Records good. A few small diversions above station for irrigation. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--6 years, 12.5 ft^3/s (0.354 m^3/s), 9,060 acre-ft/yr (11.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 107 ft^3/s (3.03 m^3/s) June 16, 1977, gage height, 7.54 ft (2.298 m); maximum gage height, 7.91 ft (2.411 m) Jan. 12, 1975 (backwater from ice); minimum daily discharge, 6.2 ft^3/s (0.18 m^3/s) May 27, 28, 31, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 41 ft^3/s (1.16 m^3/s) June 19, gage height, 7.26 ft (2.213 m), no peak above base of 50 ft^3/s (1.42 m^3/s); minimum daily discharge, 7.1 ft^3/s (0.20 m^3/s) May 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	12	12	9.1	10	13	13	10	12	8.7	11	12
2	13	12	12	9.4	11	13	13	9.8	12	9.4	13	12
3	13	12	12	9.6	11	14	13	9.8	12	9.1	13	12
4	13	12	14	9.6	11	14	14	9.8	12	8.9	13	12
5	13	11	16	9.6	12	14	14	9.6	12	8.7	14	12
6	13	11	15	9.4	12	14	14	8.7	11	7.6	14	12
7	12	11	14	9.0	12	14	14	8.2	11	8.0	14	12
8	13	11	14	8.8	12	14	13	8.4	11	8.2	16	12
9	13	11	14	8.4	12	14	12	8.2	11	8.2	18	12
10	13	11	14	8.8	12	14	12	8.7	10	8.7	19	13
11	12	11	13	9.0	12	15	12	8.4	9.6	8.4	15	12
12	12	11	14	9.0	12	15	12	8.0	9.6	8.2	14	11
13	11	12	14	9.4	12	14	12	7.6	9.6	8.9	14	11
14	11	12	13	9.6	12	15	12	7.1	9.0	8.2	14	11
15	11	12	13	9.6	12	15	12	7.6	9.0	7.6	14	11
16	11	12	14	9.6	14	15	12	7.3	9.0	8.2	15	11
17	11	12	14	9.6	13	15	12	7.3	8.8	7.8	16	11
18	11	12	14	9.4	13	15	12	7.3	8.4	7.8	14	11
19	11	12	11	9.4	13	15	13	7.8	7.6	8.2	13	11
20	11	12	10	9.0	13	15	14	7.8	7.6	7.8	13	11
21	11	12	10	9.6	13	15	15	7.6	8.0	7.8	12	11
22	11	12	11	10	13	16	14	7.8	7.8	7.8	12	10
23	11	11	11	10	13	16	13	8.4	8.0	9.4	12	10
24	11	11	11	11	13	16	12	9.4	8.0	10	13	11
25	11	11	11	11	13	16	12	9.8	7.8	11	12	10
26	11	11	11	10	13	16	11	9.8	8.2	11	12	11
27	11	11	11	9.6	14	16	11	10	8.2	11	12	10
28	11	11	10	9.4	14	15	11	10	8.2	11	12	11
29	11	11	10	9.4	13	14	11	11	8.9	11	11	11
30	12	11	9.6	9.8	---	14	11	12	8.7	12	12	10
31	12	---	9.4	10	---	13	---	12	---	11	12	---
TOTAL	364	344	382.0	295.1	360	454	376	275.2	284.0	279.6	419	337
MEAN	11.7	11.5	12.3	9.52	12.4	14.6	12.5	8.88	9.47	9.02	13.5	11.2
MAX	13	12	16	11	14	16	15	12	12	12	19	13
MIN	11	11	9.4	8.4	10	13	11	7.1	7.6	7.6	11	10
AC-FT	722	682	758	585	714	901	746	546	563	555	831	668

CAL YR 1979 TOTAL 4611.2 MEAN 12.6 MAX 17 MIN 9.4 AC-FT 9150
WTR YR 1980 TOTAL 4169.9 MEAN 11.4 MAX 19 MIN 7.1 AC-FT 8270

CHEYENNE RIVER BASIN

06394600 HELL CANYON NEAR JEWEL CAVE, NEAR CUSTER, SD

LOCATION.--Lat 43°42'56", long 103°50'05", in NW¼SW¼ sec.12, T.4 S., R.2 E., Custer County, Hydrologic Unit 10120107, on left bank 0.8 mi (1.3 km) downstream from Lithograph Canyon, 1.9 mi (3.1 km) downstream from south boundary of Jewell Cave National Monument, and 12 mi (19 km) southwest of Custer.

PERIOD OF RECORD.--April 1978 to September 1980 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 5,050 ft (1,540 m), from topographic map.

REMARKS.--Records good. Considerable loss in sink holes below gage.

EXTREMES FOR PERIOD OF RECORD.--No flow during period.

EXTREMES FOR CURRENT YEAR.--No flow during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

No flow during year

CHEYENNE RIVER BASIN

06394605 HELL CANYON NEAR CUSTER, SD

LOCATION.--Lat 43°37'00", long 103°53'27", in SW¼NW¼ sec.16, T.5 S., R.2 E., Custer County, Hydrologic Unit 10120107, in channel 8.5 mi (13.7 km) south of Jewel Cave National Monument and 19 mi (31 km) southwest of Custer.

PERIOD OF RECORD.--April 1978 to September 1980 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 4,220 ft (1,290 m), from topographic map.

REMARKS.--Records good. Considerable loss in sink holes in reach above gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25 ft^3/s (0.71 m^3/s) July 21, 1978, gage height, 40.86 ft (12.454 m), from floodmark, on basis of slope-area measurement of peak flow; no flow most days.

EXTREMES FOR CURRENT YEAR.--No flow during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

No flow during year

06395000 CHEYENNE RIVER AT EDGEMONT, SD

LOCATION.--Lat 43°18'20", long 103°49'14", in SW¼SE¼SE¼ sec.36, T.8 S., R.2 E., Fall River County, Hydrologic Unit 10120106, on right bank at downstream side of bridge on U.S. Highway 18, at Edgemont, 300 ft (91 m) downstream from Burlington Northern Railroad bridge and 600 ft (183 m) upstream from Cottonwood Creek.

DRAINAGE AREA.--7,143 mi² (18,500 km²).

PERIOD OF RECORD.--June 1903 to November 1906 (no winter records), April 1928 to February 1933, October 1946 to current year.

REVISED RECORDS.--WSP 1086: Drainage area. WSP 1116: 1947. WDR SD-78-1 1977.

GAGE.--Water-stage recorder. Datum of gage is 3,414.56 ft (1,040.758 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 1, 1906, nonrecording gage 20 ft (6 m) upstream at datum 0.7 ft (0.21 m) lower. Apr. 11, 1928, to Feb. 28, 1933, Oct. 4, 1946, to Oct. 23, 1947, and Jan. 11, 1961, to Apr. 24, 1963, nonrecording gage, and Oct. 24, 1947, to Jan. 10, 1961, and Apr. 25, 1963, to Sept. 30, 1972, water-stage recorder all at present site at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Many small reservoirs above station used for stock and irrigation water, total capacity, about 45,000 acre-ft (55.5 hm³). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--38 years, 101 ft³/s (2.860 m³/s), 73,170 acre-ft/yr (90.2 hm³/yr); median of yearly mean discharges, 76 ft³/s (2.15 m³/s), 55,000 acre-ft/yr (68 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,000 ft³/s (793 m³/s) May 20, 1978, gage height, 13.65 ft (4.161 m), present datum; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 12, 1920, reached a stage of 13.0 ft (3.96 m) and May 1, 1922, 14.0 ft (4.27 m), present datum, from floodmarks at railroad bridge.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,500 ft³/s (70.8 m³/s) Aug. 17, gage height, 4.64 ft (1.414 m), no other peak above base of 1,500 ft³/s (42.5 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	23	5.2	8.0	6.8	123	67	9.8	35	10	3.2	27
2	3.4	21	5.2	7.5	7.0	146	67	11	49	7.0	1.7	21
3	2.1	20	5.2	7.5	7.5	159	68	10	27	4.3	.83	18
4	2.1	22	5.2	8.0	8.0	143	67	10	44	4.7	.18	14
5	2.4	20	5.2	8.5	8.6	153	65	9.9	36	3.0	.11	14
6	2.7	21	5.4	8.0	13	208	60	9.6	31	1.5	.12	13
7	3.4	18	5.6	7.8	11	204	62	8.9	25	1.5	.00	11
8	3.8	15	6.0	7.8	12	219	60	9.2	22	.61	.00	8.9
9	4.2	13	6.5	7.8	16	230	53	9.6	23	.31	.00	7.5
10	4.2	18	7.0	8.2	22	251	40	9.5	19	.03	.00	5.1
11	4.6	18	6.5	8.8	20	276	41	16	14	.00	.00	4.7
12	4.6	20	6.5	9.4	22	289	43	23	14	.00	.00	3.3
13	5.4	20	6.5	10	22	293	39	25	12	.00	.00	2.4
14	5.8	29	7.0	11	25	246	36	22	136	.43	.00	1.5
15	8.1	19	7.0	12	30	120	33	19	208	.80	1.8	.90
16	9.2	18	6.0	11	34	90	30	19	275	.00	1.2	2.1
17	11	17	6.5	10	34	80	28	20	494	.00	1760	2.1
18	14	19	7.0	10	34	75	25	18	201	.00	662	1.2
19	14	23	7.0	9.6	28	77	24	18	138	.00	364	.90
20	14	24	6.6	8.8	23	7.0	24	17	89	.00	180	1.1
21	14	21	6.6	8.8	646	8.0	23	16	68	.00	109	.60
22	14	20	6.6	9.0	710	79	22	16	58	.00	79	.00
23	15	19	7.0	9.5	542	67	18	12	66	.00	71	.06
24	16	18	7.5	10	554	69	16	11	68	.02	55	.06
25	18	16	7.5	9.0	159	61	15	9.2	42	.56	46	.00
26	17	13	7.0	8.0	129	65	13	8.6	28	1.9	39	.08
27	17	10	7.0	7.0	150	60	13	8.6	22	36	37	.30
28	18	8.6	7.0	6.0	98	69	12	8.1	18	88	36	.27
29	23	6.2	7.0	5.0	79	66	12	7.6	15	18	27	.10
30	31	6.2	7.0	5.5	---	67	10	68	12	9.0	36	.07
31	23	---	7.5	6.0	---	65	---	34	---	5.7	43	---
TOTAL	331.6	536.0	200.8	263.5	3452.9	4065.0	1086	493.8	2289	193.36	3553.14	161.24
MEAN	10.7	17.9	6.48	8.50	119	131	36.2	15.9	76.3	6.24	115	5.37
MAX	31	29	7.5	12	710	293	68	68	494	88	1760	27
MIN	2.1	6.2	5.2	5.0	6.8	7.0	10	7.6	12	.00	.00	.00
AC-FT	658	1060	398	523	6850	8060	2150	979	4540	384	7050	320

CAL YR 1979 TOTAL 30646.90 MEAN 84.0 MAX 2240 MIN 2.1 AC-FT 60790
WTR YR 1980 TOTAL 16626.34 MEAN 45.4 MAX 1760 MIN .00 AC-FT 32980

06400000 HAT CREEK NEAR EDGEMONT, SD

LOCATION.--Lat 43°14'24", long 103°35'16", in SW¼SE¼NE¼ sec.25, T.9 S., R.4 E., Fall River County, Hydrologic Unit 10120108, on right bank at upstream side of bridge on State Highway 71, 2.0 mi (3.2 km) upstream from mouth, 2.0 mi (3.2 km) west of Heppner, and 12.5 mi (20.1 km) southeast of Edgemont.

DRAINAGE AREA.--1,044 mi² (2,704 km²).

PERIOD OF RECORD.--April 1905 to September 1906, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,295.71 ft (1,004.532 m) National Geodetic Vertical Datum of 1929. Nonrecording gage Apr. 8, 1905, to May 2, 1906, at site 0.6 mi (1.0 km) downstream and May 3 to July 7, 1906, at site 0.4 mi (0.6 km) upstream at different datum. Nov. 6, 1950, to May 1, 1951, and July 18 to Sept. 7, 1975, nonrecording gage and May 2, 1951, to July 17, 1975, recording gage, at site 0.4 mi (0.6 km) downstream at present datum.

REMARKS.--Records fair, except those for winter periods, which are poor. A few small diversions above station for irrigation. Lander ditch diverts water from Hat Creek 0.4 mi (0.6 km) upstream from gaging station for irrigating hay meadows downstream from station. Several observations of water temperature and specific conductance were made during the year. Results of discharge measurements, in cubic feet per second, of Lander ditch during water year 1980 are given herewith:

Oct. 1	0	Feb. 5	0	July 8	0
Nov. 5	0	Apr. 8	4.74	Aug. 5	0
Dec. 4	0.59	May 6	0.78	Sept. 15	0
Jan. 8	0	June 2	1.15		

CORRECTIONS.--The 1978 and 1979 water year dates in "REMARKS" paragraph for Lander ditch were published as 1976-77 and 1977-78 and are in error. The correct dates are 1978 and 1979.

AVERAGE DISCHARGE.--31 years, 19.4 ft³/s (0.549 m³/s), 14,060 acre-ft/yr (17.3 hm³/yr); median of yearly mean discharges, 12 ft³/s (0.34 m³/s), 8,700 acre-ft/yr (11 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,300 ft³/s (377 m³/s) June 16, 1967, gage height, 13.35 ft (4.069 m), from rating curve extended above 2,600 ft³/s (73.6 m³/s) on basis of slope-area measurement at 11.98 ft (3.652 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 346 ft³/s (9.80 m³/s) Feb. 29, gage height, 10.11 ft (3.082 m); maximum gage height, 12.58 ft (3.834 m) Feb. 21 (backwater from ice jam); no peak above base of 1,000 ft³/s (28.3 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.30	58	3.0	1.4	.12	.00	.00	.00
2	.00	.00	.00	.00	.50	31	8.8	1.4	.11	.00	.00	.00
3	.00	.00	.00	.00	.82	38	21	1.2	.05	.00	.00	.00
4	.00	.00	.00	.00	1.5	24	20	.98	.04	.00	.00	.00
5	.00	.00	.00	.00	2.2	23	23	.83	.03	.00	.00	.00
6	.00	.00	.00	.00	2.2	20	44	.48	.01	.00	.00	.00
7	.00	.00	.00	.00	2.2	17	43	.27	.00	.00	.00	.00
8	.00	.00	.00	.00	2.1	16	43	.57	.00	.00	.00	.00
9	.00	.00	.00	.00	2.0	15	28	.24	.00	.00	.00	.00
10	.00	.00	.00	.00	2.4	13	17	.14	.00	.00	.00	.00
11	.00	.00	.00	.02	2.4	14	8.3	.20	.00	.00	.00	.00
12	.00	.00	.00	.04	2.3	11	4.5	.42	.00	.00	.00	.00
13	.00	.00	.00	.06	2.3	14	2.1	.38	.00	.00	.00	.00
14	.00	.00	.00	.10	4.0	32	3.8	2.6	.01	.00	.00	.00
15	.00	.00	.00	.16	10	34	7.0	.44	.17	.00	4.6	.00
16	.00	.00	.00	.14	8.0	53	2.1	2.1	.12	.00	.23	.00
17	.00	.00	.00	.12	10	20	.92	1.1	.14	.00	1.4	.00
18	.00	.00	.00	.10	15	12	.37	.39	.15	.00	.61	.00
19	.00	.00	.00	.10	40	4.6	2.1	.09	.27	.00	.00	.00
20	.00	.00	.00	.10	100	2.5	2.8	.09	.26	.00	.00	.00
21	.00	.00	.00	.12	200	.73	2.7	.06	.15	.00	.00	.00
22	.00	.00	.00	.14	150	1.3	1.7	.10	.14	.00	.00	.00
23	.00	.00	.00	.16	160	1.2	.49	.08	.09	.00	.00	.00
24	.00	.00	.00	.18	140	1.1	1.2	.06	.00	.00	.00	.00
25	.00	.00	.00	.16	130	2.1	1.9	.03	.00	.00	.00	.00
26	.00	.00	.00	.12	122	2.6	1.9	.00	.00	.00	.00	.00
27	.00	.00	.00	.10	91	2.2	1.9	.00	.00	.00	.00	.00
28	.00	.00	.00	.08	162	2.3	1.7	.02	.00	.00	.00	.00
29	.00	.00	.00	.06	159	1.8	1.6	.01	.00	.00	.00	.00
30	.00	.00	.00	.10	---	2.0	1.6	.03	.00	.00	.00	.00
31	.00	---	.00	.14	---	2.3	---	.03	---	.00	.00	---
TOTAL	.00	.00	.00	2.30	1524.22	471.73	301.48	15.74	1.86	.00	6.84	.00
MEAN	.000	.000	.000	.074	52.6	15.2	10.0	.51	.062	.000	.22	.000
MAX	.00	.00	.00	.18	200	58	44	2.6	.27	.00	4.6	.00
MIN	.00	.00	.00	.00	.30	.73	.37	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	4.6	3020	936	598	31	3.7	.00	14	.00

CAL YR 1979 TOTAL 1016.46 MEAN 2.78 MAX 394 MIN .00 AC-FT 2020
WTR YR 1980 TOTAL 2324.17 MEAN 6.35 MAX 200 MIN .00 AC-FT 4610

06400497 CASCADE SPRINGS NEAR HOT SPRINGS, SD

LOCATION.--Lat 43°20'10", long 103°33'07", in SE¼SW¼ sec.20, T.8 S., R.5 E., Fall River County, Hydrologic Unit 10120106, on right bank near upstream end of culvert on State Highway 71, 3.3 mi (5.3 km) upstream from mouth, and 8.5 mi (13.7 km) southwest of Hot Springs.

PERIOD OF RECORD.--July 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,440 ft (1,049 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49 ft^3/s (1.39 m^3/s) July 4, 1977, gage height, 6.25 ft (1.905 m); minimum daily, 17 ft^3/s (0.48 m^3/s) for many days in 1979.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 22 ft^3/s (0.62 m^3/s) for many days; minimum daily, 18 ft^3/s (0.51 m^3/s) Sept. 14-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	21	21	21	20	20	19	20	22	22	21	19
2	20	21	21	21	20	20	19	20	22	22	20	19
3	20	21	21	21	20	20	19	20	22	22	20	19
4	20	21	21	21	20	20	19	20	22	22	20	19
5	20	21	21	21	20	20	19	20	22	22	20	19
6	20	21	21	21	20	20	19	20	22	22	20	19
7	20	21	21	21	20	20	19	20	21	22	20	19
8	20	21	21	21	20	19	19	20	22	22	20	19
9	20	21	21	21	20	19	19	21	22	22	20	19
10	20	21	21	21	20	19	19	20	22	22	20	19
11	20	21	21	21	20	19	19	20	22	22	20	19
12	20	21	21	21	20	20	19	20	21	22	20	19
13	20	21	21	21	20	20	19	20	21	22	20	19
14	20	21	21	21	20	20	19	21	22	22	20	18
15	20	21	21	21	20	20	19	21	22	22	20	18
16	20	21	21	21	20	20	20	21	22	22	20	18
17	20	21	21	20	20	20	20	21	22	22	20	19
18	20	21	21	20	20	20	20	21	22	22	20	19
19	21	21	21	20	20	20	19	21	22	22	19	19
20	20	21	21	20	20	20	20	21	22	21	19	19
21	20	21	21	20	20	19	20	21	22	21	19	19
22	21	21	21	20	20	19	20	21	22	21	19	19
23	21	21	21	20	20	19	20	21	22	21	19	19
24	21	21	21	20	20	19	20	21	22	21	20	19
25	21	21	21	20	20	19	20	21	22	21	19	19
26	21	21	21	20	20	19	20	21	22	21	19	19
27	21	21	21	20	20	19	20	21	22	21	19	19
28	21	21	21	20	20	19	20	21	22	21	19	19
29	21	21	21	20	20	19	20	21	22	21	19	19
30	21	21	21	20	---	19	20	21	22	20	19	19
31	21	---	21	20	---	19	---	21	---	21	19	---
TOTAL	631	630	651	636	580	605	584	639	657	669	609	567
MEAN	20.4	21.0	21.0	20.5	20.0	19.5	19.5	20.6	21.9	21.6	19.6	18.9
MAX	21	21	21	21	20	20	20	21	22	22	21	19
MIN	20	21	21	20	20	19	19	20	21	20	19	18
AC-FT	1250	1250	1290	1260	1150	1200	1160	1270	1300	1330	1210	1120

CAL YR 1979 TOTAL 7318 MEAN 20.0 MAX 24 MIN 17 AC-FT 14520
WTR YR 1980 TOTAL 7456 MEAN 20.4 MAX 22 MIN 18 AC-FT 14790

06401000 ANGOSTURA RESERVOIR NEAR HOT SPRINGS, SD

LOCATION.--Lat 43°20'35", long 103°26'16", in SW¼NW¼ sec.20, T.8 S., R.6 E., Fall River County, Hydrologic Unit 10120106, at dam on Cheyenne River, 6.5 mi (10.5 km) southeast of Hot Springs.

DRAINAGE AREA.--9,100 mi² (23,570 km²), approximately.

PERIOD OF RECORD.--October 1949 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Aug. 26, 1965, nonrecording gage at same site and datum.

REMARKS.--Reservoir formed by concrete gravity dam with earth embankment with gated concrete gravity spillway section. Storage began Oct. 3, 1949; dam completed December 1949. Conservation capacity, 127,558 acre-ft (157 hm³) between elevations 3,139.75 ft (956.996 m), invert of lowest outlet, and 3,187.2 ft (971.46 m), top of spillway gates. Dead storage below elevation 3,139.75 ft (956.996 m), 11,203 acre-ft (13.8 hm³). Surcharge capacity, 196,221 acre-ft (242 hm³), maximum pool elevation. Figures given herein represent contents above elevation 3,139.75 ft (956.996 m). Water is stored for irrigation.

COOPERATION.--Records of elevations, contents, and diversion to Angostura project furnished by Water and Power Resources Service.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 145,200 acre-ft (179 hm³) June 18, 1962, elevation, 3,189.00 ft (972.007 m); minimum observed since normal operating level reached, 45,350 acre-ft (55.9 hm³) Sept. 28, 1960, elevation, 3,162.90 ft (964.052 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 127,558 acre-ft (157 hm³) Mar. 28, elevation, 3,187.20 ft (971.459 m); minimum, 84,036 acre-ft (104 hm³) Sept. 30, elevation, 3,176.80 ft (968.289 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation	Contents	Change in contents	†Diversions
Sept. 30	3184.82	116566		
Oct. 31	3184.40	114713	-1853	2110
Nov. 30	3184.67	115904	+1191	
Dec. 30	3184.96	117183	+1279	
CAL YR 1979			-1728	43127
Jan. 31	3185.33	118866	+1683	
Feb. 29	3186.90	126133	+7267	
Mar. 31	3187.13	127223	+1090	
Apr. 30	3186.90	126133	-1090	977
May 31	3185.98	121832	-4301	5338
June 30	3185.71	120600	-1232	5099
July 31	3181.11	100804	-19796	7812
Aug. 31	3178.47	90354	-10450	14068
Sept. 30	3176.80	84036	-6318	5451
WTR YR 1980			-32530	40855

† Diversions from Angostura irrigation project.

06401500 CHEYENNE RIVER BELOW ANGOSTURA DAM, SD

LOCATION.--Lat 43°20'42", long 103°26'12", in NE¼NW¼NW¼ sec.20, T.8 S., R.6 E., Fall River County, Hydrologic Unit 10120109, on right bank 800 ft (244 m) downstream from Angostura Dam, 4.8 mi (7.7 km) upstream from Fall River and 6.5 mi (10.5 km) southeast of Hot Springs.

DRAINAGE AREA.--9,100 mi^2 (23,600 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year, seasonal records only beginning October 1978. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1946(M). WDR SD-78-1: 1962(M), 1967(M), 1971(M).

GAGE.--Water-stage recorder. Datum of gage is 3,058.02 ft (932.084 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Oct. 17, 1946, nonrecording gage and Oct. 17, 1946, to July 7, 1953, water-stage recorder at site 4.8 mi (7.7 km) downstream at different datum.

REMARKS.--Records good. Flow regulated by Angostura Reservoir 800 ft (244 m) upstream since October 1949 (see station 06401000).

AVERAGE DISCHARGE.--33 years(water years 1945-78), 78.5 ft^3/s (2.223 m^3/s), 56,870 acre-ft/yr (70.1 hm^3/yr); median of yearly mean discharges, 52 ft^3/s (1.47 m^3/s), 37,700 acre-ft/yr (46 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,300 ft^3/s (858 m^3/s) May 20, 1978, gage height, 15.97 ft (4.868 m), from rating curve extended above 12,000 ft^3/s (340 m^3/s); no flow Oct. 9, 1949, to Feb. 5, 1950, Apr. 28, Aug. 26, 30, 1951.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 719 ft^3/s (20.4 m^3/s) Feb. 26, gage height, 4.92 ft (1.500 m); minimum daily, 1.7 ft^3/s (0.05 m^3/s) Apr. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					3.2	114	95	3.7	3.0	2.6	1.8	
2					3.2	33	142	3.9	2.8	2.5	1.9	
3					3.2	19	165	3.9	2.9	2.4	1.8	
4					3.2	132	174	3.4	2.8	2.4	1.7	
5					3.2	154	175	3.7	2.9	2.4	---	
6					3.2	131	174	3.7	3.1	2.3	---	
7					3.2	122	145	4.1	3.7	2.3	---	
8					3.0	104	130	3.9	3.5	2.3	---	
9					2.9	94	121	3.8	3.4	2.1	---	
10					2.9	96	79	3.8	3.4	2.3	---	
11					2.9	95	77	3.8	3.6	2.1	---	
12					2.9	95	73	4.3	3.1	2.2	---	
13					2.9	100	65	3.8	3.3	2.1	---	
14					2.9	138	59	3.8	6.1	2.1	---	
15					2.7	212	60	3.6	3.3	2.2	---	
16					2.6	250	72	3.7	3.3	2.1	---	
17					2.6	309	49	3.3	3.2	1.9	---	
18					2.6	297	25	3.2	3.7	1.9	---	
19					2.6	198	2.3	3.1	4.1	1.8	---	
20					2.6	149	5.7	3.0	3.9	1.9	---	
21					2.6	151	2.4	2.9	4.9	2.3	---	
22					2.6	97	1.8	3.0	3.4	2.1	---	
23					2.4	51	1.7	3.1	4.4	2.2	---	
24					3.9	67	3.8	3.4	2.9	2.0	---	
25					289	83	3.7	3.7	2.8	2.4	---	
26					615	82	3.5	2.9	3.1	2.1	---	
27					674	83	3.8	5.9	2.7	1.9	---	
28					504	98	3.7	3.2	2.7	1.9	---	
29					292	161	3.7	3.3	2.7	1.9	---	
30					---	209	3.8	3.3	2.5	1.9	---	
31					---	107	---	3.6	---	2.0	---	
TOTAL					2444.0	4031	1919.9	111.8	101.2	66.6	---	
MEAN					84.3	130	64.0	3.61	3.37	2.15	---	
MAX					674	309	175	5.9	6.1	2.6	---	
MIN					2.4	19	1.7	2.9	2.5	1.8	---	
AC-FT					4850	8000	3810	222	201	132	---	

06401500 CHEYENNE RIVER BELOW ANGOSTURA DAM, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to September 1970, October 1971 to current year.
WATER TEMPERATURES: October 1968 to September 1970, October 1971 to September 1973, October 1975 to September 1976, October 1977 to September 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,750 micromhos Jan. 13, 1975; minimum daily, 575 micromhos July 5, 1977.
WATER TEMPERATURES: Maximum daily, 31.0°C July 6, 10, 18, 23, 1976; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
FEB										
04...	1150	3.0	--	7.6	5.0	850	700	220	73	200
26...	1300	684	2550	8.5	4.0	770	630	190	71	220
APR										
09...	1340	131	2160	8.0	6.5	720	590	190	60	190
MAY										
06...	1640	3.6	2210	8.5	18.0	790	650	210	65	180
JUN										
04...	0825	3.0	2290	8.2	15.5	920	770	240	78	230
JUL										
08...	1530	2.2	1995	8.3	27.0	740	630	190	65	200

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
FEB									
04...	44	3.0	9.3	210	150	930	130	.6	8.5
26...	38	3.5	9.2	230	140	950	100	.7	8.3
APR									
09...	36	3.1	9.4	200	130	860	94	.6	6.2
MAY									
06...	33	2.8	10	--	140	870	100	.6	5.9
JUN									
04...	35	3.3	14	--	150	1100	130	.6	8.1
JUL									
08...	37	3.2	12	--	110	900	98	.9	4.3

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	CYANIDE TOTAL (MG/L AS CN) (00720)
FEB									
04...	1660	2.26	13.7	.27	.000	.000	.02	.06	--
26...	1630	2.22	3010	.17	.010	.000	.01	.03	--
APR									
09...	1490	2.03	527	.17	.020	.010	.00	.00	--
MAY									
06...	1530	2.08	14.9	.09	.020	.030	.05	.15	--
JUN									
04...	1890	2.57	15.3	.11	.050	.010	.03	.09	--
JUL									
08...	1540	2.09	9.15	.02	.030	.000	.00	.00	--

06402000 FALL RIVER AT HOT SPRINGS, SD

LOCATION.--Lat 43°25'50", long 103°28'33", in NW¼NW¼ sec.24, T.7 S., R.5 E., Fall River County, Hydrologic Unit 10120109, on left bank at intersection of River Street and University Avenue in Hot Springs and 6.0 mi (9.7 km) upstream from mouth.

DRAINAGE AREA.--137 mi² (355 km²).

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for October 1937, published in WSP 1309.

REVISED RECORDS.--WSP 1279: 1938, 1941(M), 1947(M). WSP 1729: 1959(M).

GAGE.--Water-stage recorder. Datum of gage is 3,413.20 ft (1,040.343 m) National Geodetic Vertical Datum of 1929. Prior to June 2, 1939, nonrecording gage at site 300 ft (91 m) upstream at datum 3.00 ft (0.914 m) higher.

REMARKS.--Records good. Flow regulated by Coldbrook Reservoir, capacity, 7,200 acre-ft (8.88 hm³), beginning September 1952, and Cottonwood Springs Lake, capacity, 8,385 acre-ft (10.3 hm³) since June 1969. Some diversion above station for municipal supply of Hot Springs. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--43 years, 25.2 ft³/s (0.714 m³/s), 18,260 acre-ft/yr (22.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,100 ft³/s (371 m³/s) Sept. 4, 1938, gage height, 18.4 ft (5.61 m), site and datum then in use, from rating curve extended above 51 ft³/s (1.44 m³/s) on basis of weir formula and slope-area measurement of peak flow; minimum, 4.0 ft³/s (0.11 m³/s) Sept. 23, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 86 ft³/s (2.44 m³/s) Aug. 30, gage height, 2.50 ft (0.762 m); minimum daily, 16 ft³/s (0.45 m³/s) July 6-8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	20	22	25	23	20	22	20	21	19	18	23
2	23	20	22	25	23	20	22	21	21	17	19	23
3	23	20	22	26	22	20	23	21	20	17	18	21
4	24	20	22	26	22	21	23	21	20	17	19	21
5	22	20	22	27	21	21	24	21	20	17	18	21
6	24	19	22	27	21	21	24	20	19	16	18	21
7	23	21	22	27	20	21	25	20	20	16	18	22
8	22	20	22	27	20	22	25	20	19	16	18	22
9	22	20	22	26	20	23	24	19	19	17	18	22
10	22	20	22	26	20	21	24	21	18	18	19	22
11	22	21	21	26	21	21	24	21	18	17	18	21
12	22	21	22	25	22	22	23	23	18	18	18	21
13	22	21	22	25	22	22	23	21	18	18	18	22
14	22	21	22	25	23	23	23	20	20	18	18	22
15	21	21	22	24	23	23	23	21	19	18	23	22
16	22	21	22	24	22	24	22	22	18	18	21	22
17	22	20	23	24	22	24	22	21	18	19	20	20
18	22	21	21	24	24	24	22	21	18	20	21	20
19	22	20	22	23	23	24	22	21	18	19	20	20
20	20	20	23	23	21	24	22	21	19	19	20	21
21	21	22	23	23	21	23	22	19	20	20	20	20
22	22	22	24	23	23	23	23	19	22	18	20	20
23	21	21	24	23	22	23	21	19	20	18	19	20
24	21	21	25	23	22	22	22	19	22	18	19	18
25	21	21	24	23	22	23	22	19	20	18	21	19
26	21	21	24	23	23	22	22	18	18	20	18	19
27	21	21	24	22	21	22	23	18	20	19	18	18
28	22	22	24	23	21	22	22	19	19	18	18	19
29	24	20	24	23	20	22	22	18	19	18	20	19
30	22	21	24	23	---	22	21	19	20	18	24	20
31	21	---	24	23	---	21	---	21	---	18	22	---
TOTAL	682	619	704	757	630	686	682	624	581	557	599	621
MEAN	22.0	20.6	22.7	24.4	21.7	22.1	22.7	20.1	19.4	18.0	19.3	20.7
MAX	24	22	25	27	24	24	25	23	22	20	24	23
MIN	20	19	21	22	20	20	21	18	18	16	18	18
AC-FT	1350	1230	1400	1500	1250	1360	1350	1240	1150	1100	1190	1230

CAL YR 1979 TOTAL 8093 MEAN 22.2 MAX 34 MIN 19 AC-FT 16050
WTR YR 1980 TOTAL 7742 MEAN 21.2 MAX 27 MIN 16 AC-FT 15360

06402500 BEAVER CREEK NEAR BUFFALO GAP, SD

LOCATION.--Lat 43°27'56", long 103°18'22", in SE¼SE¼ sec.5, T.7 S., R.7 E., Fall River County, Hydrologic Unit 10120109, on left bank 1.5 mi (2.4 km) south of Buffalo Gap and 4.5 mi (7.2 km) upstream from mouth.

DRAINAGE AREA.--130 mi² (340 km²), approximately.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for October, November, 1937, published in WSP 1309.

REVISED RECORDS.--WSP 956: 1941. WSP 1309: 1939-40(M), 1947(M).

GAGE.--Water-stage recorder. Altitude of gage is 3,150 ft (960 m), from topographic map. Prior to June 20, 1939, nonrecording gage at site 0.8 mi (1.3 km) downstream at different datum.

REMARKS.--Records good except those for winter periods and those for no gage-height record, which are poor. Nearly all flow is diverted above station during irrigation season. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--43 years, 7.03 ft³/s (0.199 m³/s), 5,090 acre-ft/yr (6.28 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s (331 m³/s) Sept. 4, 1938, gage height, 16.46 ft (5.017 m), site and datum then in use, from rating curve extended above 11 ft³/s (0.31 m³/s) on basis of slope-area measurement of peak flow; no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1927 reached a stage of 18.0 ft (5.49 m), former site and datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15 ft³/s (0.42 m³/s) Oct. 29, gage height, 5.36 ft (1.634 m), no peak above base of 24 ft³/s (0.68 m³/s); maximum gage height, 5.95 ft (1.814 m) May 12, 13 (backwater from beaver dam); minimum daily discharge, 0.13 ft³/s (0.004 m³/s) Aug. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	13	10	8.6	10	10	11	2.4	.65	.32	.17	.85
2	2.5	13	10	8.5	11	10	11	2.2	.68	.38	.18	.81
3	.94	12	11	8.5	11	11	11	1.9	.59	.37	.19	.67
4	1.8	12	12	8.7	11	11	11	1.5	.57	.25	.16	.70
5	2.1	12	11	8.7	12	10	12	1.2	.57	.26	.23	.68
6	2.4	10	11	8.9	12	10	12	1.0	.56	.24	.24	.65
7	2.7	9.0	11	9.1	12	10	11	.82	.70	.24	.16	.56
8	3.4	9.4	10	9.9	12	11	11	.86	.72	.28	.13	.46
9	5.4	10	11	11	12	11	11	.93	.72	.33	.24	.47
10	5.3	10	7.6	12	12	12	10	1.0	.66	.27	.29	.66
11	3.7	11	6.9	10	12	12	10	1.2	.65	.21	.38	.59
12	4.0	11	7.0	12	12	12	10	1.3	.65	.15	.22	.44
13	5.0	12	7.0	12	12	12	10	1.4	.63	.21	.17	.66
14	6.0	12	7.2	12	12	12	10	1.2	.66	.22	.23	.73
15	6.8	11	7.3	12	12	12	10	1.2	.91	.43	.70	.70
16	7.7	11	7.3	11	11	11	10	1.3	.87	.43	1.2	.58
17	8.5	10	7.8	11	11	11	9.0	1.3	.87	.31	.69	.60
18	9.2	11	7.4	11	11	11	8.4	1.2	.80	.29	.50	.39
19	8.4	10	7.4	10	11	11	6.3	1.2	.87	.27	.37	.53
20	9.5	11	7.5	10	11	11	4.5	1.2	1.1	.23	.54	.50
21	12	11	7.6	11	11	11	4.6	1.1	1.2	.37	.50	.39
22	13	11	8.3	11	11	11	4.8	1.1	1.1	.35	.44	.37
23	13	11	8.3	12	11	10	4.7	1.0	.81	.25	.44	.36
24	13	11	8.5	12	11	10	4.3	1.1	.67	.29	.41	.49
25	13	11	8.7	12	11	10	4.0	.72	.64	.39	.29	.49
26	13	11	8.8	11	11	10	3.8	.71	.57	.71	.23	.49
27	13	11	9.0	10	11	10	3.8	.74	.44	.56	.34	.46
28	13	10	8.9	9.0	11	10	3.4	.62	.37	.37	.42	.45
29	14	11	9.0	9.0	11	11	2.9	.63	.41	.24	.38	.52
30	13	11	8.8	9.0	---	11	2.6	.72	.36	.16	.68	1.2
31	12	---	8.5	10	---	11	---	.73	---	.17	1.1	---
TOTAL	239.84	329.4	272.0	320.9	329	336	238.1	35.48	21.20	9.55	12.22	17.45
MEAN	7.74	11.0	8.77	10.4	11.3	10.8	7.94	1.14	.71	.31	.39	.58
MAX	14	13	12	12	12	12	12	2.4	1.2	.71	1.2	1.2
MIN	.94	9.0	6.9	8.5	10	10	2.6	.62	.36	.15	.13	.36
AC-FT	476	653	540	637	653	666	472	70	42	19	24	35

CAL YR 1979 TOTAL 2833.65 MEAN 7.76 MAX 21 MIN .05 AC-FT 5620
WTR YR 1980 TOTAL 2161.14 MEAN 5.90 MAX 14 MIN .13 AC-FT 4290

06402600 CHEYENNE RIVER NEAR BUFFALO GAP, SD

LOCATION.--Lat 43°30'05", long 103°04'23", in SW¼NE¼ sec.29, T.6 S., R.9 E., Custer County, Hydrologic Unit 10120109, on right bank at right end of highway bridge, 5.8 mi (9.3 km) upstream from Cottonwood Creek and 12 mi (19 km) east of Buffalo Gap.

DRAINAGE AREA.--9,810 mi² (25,410 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1968 to September 1980 (discontinued).

REVISED RECORDS.--WRD SD-76-1: 1970-75.

GAGE.--Water-stage recorder. Datum of gage is 2,811.45 ft (856.930 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Angostura Reservoir 34 mi (55 km) upstream (see station 06401000).

AVERAGE DISCHARGE.--12 years, 107 ft³/s (3.030 m³/s), 77,520 acre-ft/yr (95.6 hm³/yr); median of yearly mean discharges, 76 ft³/s (2.15 m³/s), 55,100 acre-ft/yr (68 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,000 ft³/s (708 m³/s) May 21, 1978, gage height, 13.15 ft (4.008 m); minimum daily, 0.7 ft³/s (0.020 m³/s) July 20, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,350 ft³/s (38.2 m³/s) Feb. 26, gage height, 5.75 ft (1.753 m); minimum daily, 0.7 ft³/s (0.02 m³/s) July 20.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 4 to Sept. 30; stage-discharge relation affected by ice Dec. 10-20, Jan. 11 to Feb. 2, Feb. 8-24)

2.4	0	2.7	12	3.3	65	4.3	320
2.5	3.5	3.0	32	3.8	160	5.0	670

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	76	92	70	50	233	162	43	60	29	32	70
2	65	72	95	70	55	175	155	43	50	25	32	66
3	62	71	88	70	60	110	175	42	43	36	36	65
4	61	74	85	70	62	114	188	40	40	27	37	60
5	64	72	78	68	65	238	194	41	40	33	36	60
6	61	72	74	68	69	194	197	43	76	33	36	60
7	60	71	74	66	70	162	194	41	90	19	34	57
8	65	71	71	64	70	148	182	40	99	15	34	61
9	70	72	71	62	74	142	142	45	108	26	36	62
10	72	71	72	64	74	131	103	45	77	29	38	62
11	74	72	68	66	70	126	80	49	58	42	38	62
12	72	72	68	68	74	126	72	53	49	24	38	62
13	71	72	68	68	76	120	77	64	43	17	38	62
14	70	71	68	66	76	122	78	53	45	21	38	62
15	68	72	68	64	74	155	92	39	110	21	52	64
16	70	71	70	64	70	224	94	41	87	12	90	65
17	68	74	70	64	72	233	95	46	42	10	61	65
18	70	72	68	66	74	284	80	49	41	12	56	65
19	68	72	68	66	76	262	72	52	40	5.1	52	65
20	70	76	70	65	76	185	53	58	48	.70	50	65
21	71	85	68	63	76	165	45	57	56	1.0	61	65
22	70	77	66	64	76	170	46	56	94	3.8	60	65
23	70	74	66	64	76	122	64	55	57	14	58	65
24	65	76	66	62	74	88	60	51	35	16	58	66
25	64	72	66	60	71	94	61	55	38	15	60	68
26	66	74	68	55	495	110	62	57	36	18	58	68
27	65	74	68	59	616	112	62	55	33	16	58	68
28	64	70	68	50	616	122	61	56	30	21	60	66
29	77	72	68	45	420	135	55	70	29	29	58	66
30	88	87	70	48	---	180	46	72	30	35	56	65
31	80	---	70	50	---	206	---	57	---	36	65	---
TOTAL	2123	2207	2230	1940	3907	5008	3047	1568	1684	641.60	1524	1922
MEAN	68.5	73.6	71.9	62.6	135	162	102	50.6	56.1	20.7	49.2	64.1
MAX	88	87	95	70	616	284	197	72	110	42	90	70
MIN	60	70	66	45	50	88	45	39	29	.70	32	57
AC-FT	4210	4380	4420	3850	7750	9930	6040	3110	3340	1270	3020	3810

CAL YR 1979 TOTAL 33295.00 MEAN 91.2 MAX 600 MIN 33 AC-FT 66040
WTR YR 1980 TOTAL 27801.60 MEAN 76.0 MAX 616 MIN .70 AC-FT 55140

06402600 CHEYENNE RIVER NEAR BUFFALO GAP, SD--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected 6.0 mi (9.6 km) downstream from discharge station.

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURES: October 1968 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,300 micromhos Dec. 17, 1979; minimum daily, 1,120 micromhos Mar. 11, 12, 1978.
WATER TEMPERATURES: Maximum daily, 32.0°C on several days during July to August 1969; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,300 micromhos Dec. 17; minimum daily, 2,070 micromhos June 23.
WATER TEMPERATURES: Maximum daily, 31.0°C June 26; minimum daily, 0.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)
OCT										
03...	1615	60	2800	8.3	14.5	990	820	250	88	220
NOV										
07...	1315	72	3020	8.2	6.0	930	730	280	57	230
DEC										
05...	1415	76	3650	8.0	1.0	950	770	240	84	210
JAN										
09...	1530	62	3550	7.9	.0	1400	1200	370	120	270
FEB										
06...	1430	69	2500	7.6	.0	1000	810	270	82	190
28...	1545	623	2400	8.3	3.0	800	650	210	68	220
APR										
14...	1520	118	2340	8.7	15.5	900	750	240	73	200
MAY										
07...	1455	43	2440	8.4	20.0	920	760	240	78	220
JUN										
04...	1620	36	2590	8.2	27.0	820	680	220	66	190
JUL										
09...	1535	24	2330	8.2	32.0	900	790	230	80	250
AUG										
06...	1535	36	2370	8.2	--	920	780	230	83	240
SEP										
16...	1645	66	2480	8.4	16.0	900	740	230	80	230

06402600 CHEYENNE RIVER NEAR BUFFALO GAP, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS PO4) (00660)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT									
03...	1900	2.58	308	.57	.030	.010	.03	.09	--
NOV									
07...	1960	2.67	384	1.7	.010	.000	.01	.03	--
DEC									
05...	1780	2.42	365	1.2	.000	.010	.00	.00	--
JAN									
09...	2520	3.43	422	1.9	.000	.010	.01	.03	--
FEB									
06...	1840	2.50	343	1.5	.000	.000	.01	.03	--
28...	1650	2.24	2780	.32	.130	.000	.04	.12	--
APR									
14...	1730	2.35	551	.22	.030	.010	.00	.00	--
MAY									
07...	1750	2.38	203	.25	.040	.020	.02	.06	--
JUN									
04...	1570	2.14	153	.09	.010	.010	.02	.06	--
JUL									
09...	1880	2.56	122	.00	.040	.010	.00	.00	--
AUG									
06...	1900	2.58	185	.40	.040	.000	.00	.00	--
SEP									
16...	1800	2.45	321	.48	.020	.010	.00	.00	--

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.0	4.0	1.5	1.5	---	.0	5.0	13.0	---	26.0	24.5	21.0
2	11.0	4.0	1.5	1.0	---	.0	5.5	14.0	---	27.5	24.0	22.0
3	10.0	4.0	1.0	1.0	---	.0	4.0	14.0	---	29.0	24.5	19.5
4	8.0	5.0	4.5	1.5	---	.0	4.0	14.5	---	27.0	19.5	23.5
5	8.0	4.0	1.5	1.0	---	.0	6.5	15.5	---	29.5	21.0	24.0
6	10.0	1.5	2.0	.5	---	.0	8.5	15.5	---	25.0	21.5	24.5
7	9.0	2.0	5.0	.5	---	.0	8.0	15.5	---	25.5	29.0	25.0
8	7.5	2.0	1.0	.5	---	.0	6.0	14.5	---	25.0	25.0	25.5
9	7.5	2.5	2.0	.5	---	.0	7.0	13.5	---	30.0	24.0	20.5
10	7.5	2.0	1.0	1.0	---	.0	8.5	21.0	---	27.0	22.0	21.5
11	11.0	2.0	.5	1.5	---	.0	6.5	12.5	---	27.5	19.5	21.5
12	8.0	2.0	1.0	1.5	---	.0	7.0	12.0	---	26.5	20.0	21.5
13	9.0	2.0	1.0	1.5	---	.0	7.5	13.0	---	29.5	20.0	22.0
14	8.0	2.0	1.0	2.0	29.0	3.5	7.0	14.0	---	27.0	23.0	22.0
15	9.0	2.0	1.0	2.0	28.0	4.0	10.0	14.0	---	27.0	19.5	22.5
16	12.0	3.5	.0	2.0	28.0	5.5	10.0	14.5	---	29.0	19.0	21.5
17	9.0	3.0	1.0	1.0	30.0	6.5	8.5	13.5	27.0	29.5	21.5	20.0
18	10.0	4.0	2.0	1.5	30.0	8.0	10.5	15.0	28.0	28.5	25.0	16.5
19	10.0	5.0	2.0	1.0	31.0	5.5	13.5	17.0	24.0	28.0	25.5	19.5
20	12.0	2.0	1.5	1.5	31.0	4.5	14.0	21.0	23.5	30.5	28.0	22.0
21	8.0	2.0	1.0	2.0	1.0	3.5	15.0	24.0	23.0	29.0	27.0	21.0
22	7.0	1.0	.5	2.0	.0	5.0	13.5	---	30.0	29.5	22.0	19.5
23	8.0	1.0	1.0	3.5	.0	4.5	10.5	---	24.0	30.0	22.5	20.0
24	8.0	1.5	1.0	3.0	1.0	4.5	10.5	---	24.0	29.0	23.0	18.0
25	8.5	1.0	1.0	2.0	1.0	5.5	11.0	---	23.5	28.5	22.5	17.5
26	12.0	1.5	1.0	2.0	1.0	5.0	12.0	---	31.0	27.5	26.0	15.5
27	7.5	1.0	1.0	2.0	3.0	5.5	12.5	---	25.0	28.0	23.0	16.5
28	7.0	1.0	1.5	1.5	4.0	6.0	13.5	---	28.0	30.0	21.0	16.0
29	8.0	1.5	2.0	1.5	.5	6.0	13.5	---	24.0	30.5	19.5	16.0
30	5.0	1.5	1.0	1.5	---	8.0	14.5	---	23.5	29.5	19.0	15.5
31	4.0	---	.5	1.5	---	7.0	---	---	---	29.5	19.5	---
MEAN	8.5	2.5	1.5	1.5	13.5	3.0	9.5	15.5	25.5	28.0	22.5	20.5

06402600 CHEYENNE RIVER NEAR BUFFALO GAP, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS- SIUM DIS- SOLVED (MG/L AS NA) (00933)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
OCT									
03...	43	3.0	1.7	220	170	1100	120	.6	12
NOV									
07...	34	3.3	18	250	200	1100	130	.5	15
DEC									
05...	32	3.0	22	230	180	980	120	.5	12
JAN									
09...	29	3.1	19	290	260	1400	160	.6	16
FEB									
06...	29	2.6	14	200	200	1000	140	.5	14
28...	37	3.4	11	230	150	930	110	.7	9.7
APR									
14...	32	2.9	12	210	150	1000	110	.7	6.4
MAY									
07...	34	3.2	17	--	160	950	140	.7	5.8
JUN									
04...	33	2.9	9.8	--	140	890	100	.6	6.3
JUL									
09...	37	3.6	16	--	110	1100	130	.8	4.1
AUG									
06...	36	3.5	17	--	140	1100	140	.6	6.8
SEP									
16...	35	3.3	19	--	160	1000	130	.6	6.8

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2600	2520	2710	2650	---	2460	2360	2300	2370	2420	2500	2380
2	2550	2500	2690	2700	---	2450	2400	2320	2430	2460	2540	2360
3	2650	2550	2590	2680	---	2370	2300	2270	2430	2480	2480	2380
4	2550	2620	2500	2680	---	2480	2280	2320	---	2490	2480	2340
5	2620	2600	2400	2680	---	2660	2290	2300	2530	2490	2470	2420
6	2550	2520	2600	2690	---	2170	2280	2330	2480	2500	2440	2350
7	2550	2500	2600	2700	---	2200	2280	2360	2430	2490	2450	2340
8	2600	2500	2610	3000	---	2300	2290	2350	2390	2530	2440	2420
9	2600	2600	2520	3000	---	2300	2330	2340	2420	2530	2450	2330
10	2700	2500	2550	2550	---	2330	2300	2290	2420	2550	2440	2320
11	2580	2510	2600	2550	---	2310	2330	2270	2410	2600	2460	2390
12	2600	2600	2780	2600	---	2260	2410	2230	2400	2600	2430	2390
13	2620	2580	2800	2260	---	2290	2370	2330	2410	2520	2440	2360
14	2680	2500	2500	2300	2450	2290	2390	2360	2480	2540	2340	2350
15	2680	2600	2600	2330	2600	2250	2400	2300	2450	2450	2340	2330
16	2600	2520	3260	2400	2750	2220	2420	2320	2360	2450	2330	2400
17	2650	2520	3300	2400	2600	2180	2420	2360	2240	2470	2330	2360
18	2600	2550	2880	2420	2550	2160	2390	2380	2390	2440	2320	2400
19	2650	2600	2620	2400	2450	2190	2450	2400	2390	2460	2380	2520
20	2600	2600	2590	2440	2300	2180	2480	2380	2370	2450	2390	2450
21	2650	2580	2520	2450	2250	2220	2640	2360	2340	2450	2420	2500
22	2700	2690	2600	2450	2300	2230	2710	2410	2080	2460	2410	2490
23	2650	2700	2610	2450	2360	2220	2700	2380	2070	2500	2420	2440
24	2650	2600	2680	2470	2400	2330	2500	2370	2130	2380	2400	2450
25	2650	2560	2600	2450	2300	2360	2470	2410	2120	2340	2450	2450
26	2650	2650	2600	2880	2400	2270	2480	2370	2330	2450	2460	2540
27	2620	2500	2700	2880	2200	2230	2460	2370	2360	2440	2300	2610
28	2650	2780	2700	2900	2260	2230	2460	2370	2470	2450	2350	2540
29	2700	2800	2700	2850	2350	2230	2470	2380	2460	2450	2320	2520
30	2620	2800	2700	2880	---	2230	2500	2380	2480	2520	2350	2570
31	2650	---	2700	2880	---	2190	---	2280	---	2550	2430	---
MEAN	2630	2590	2670	2610	2410	2280	2420	2340	2370	2480	2410	2420

06404000 BATTLE CREEK NEAR KEYSTONE, SD

LOCATION.--Lat 43°52'21", long 103°20'10", in SW¼SW¼ sec.18, T.2 S., R.7 E., Pennington County, Hydrologic Unit 10120109, at right downstream end county highway bridge, 0.6 mi (1.0 km) downstream from Iron Creek and 4.5 mi (7.2 km) southeast of Keystone.

DRAINAGE AREA.--66 mi² (171 km²).

PERIOD OF RECORD.--July 1945 to July 1947, October 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,800 ft (1,160 m), from topographic map. Prior to Nov. 13, 1961, nonrecording gage at site 250 ft (76 m) downstream at different datum and Nov. 13 to Dec. 5, 1961, at same site at present datum. Dec. 6, 1961, to June 9, 1972, water-stage recorder at site 210 ft (64 m) downstream at present datum (destroyed by flood); June 10 to Nov. 20, 1972, nonrecording gage 180 ft (55 m) downstream at present datum; Nov. 21, 1972, to Nov. 27, 1973, water-stage recorder at present site and datum; Nov. 28, 1973, to Nov. 7, 1974, nonrecording gage 180 ft (55 m) downstream at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--20 years (water years 1946, 1962-80), 9.76 ft³/s (0.276 m³/s), 7,070 acre-ft/yr (8.72 hm³/yr); median of yearly mean discharges, 8.3 ft³/s (0.24 m³/s), 6,000 acre-ft/yr (7.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,200 ft³/s (742 m³/s) June 9, 1972, gage height, 14.5 ft (4.42 m), from floodmarks, site then in use, from rating curve extended above 550 ft³/s (15.6 m³/s) on basis of slope-area measurement of peak flow; no flow for many days in 1961, 1962, 1970, 1974, 1976, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 21 ft³/s (0.60 m³/s) June 17, gage height, 3.59 ft (1.094 m), no peak above base of 100 ft³/s (2.83 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	2.7	2.9	.29	.50	2.0	3.7	4.9	7.0	1.2	.61	1.4
2	1.0	2.7	3.0	.34	.50	1.8	3.3	4.7	5.9	1.1	.32	1.2
3	1.1	2.7	3.0	.56	.50	1.7	3.2	4.3	4.5	1.1	.01	.87
4	1.2	2.7	3.1	.55	.50	4.8	3.9	3.9	3.1	.91	.00	.51
5	1.1	2.6	3.3	.50	.45	1.7	6.4	4.4	2.4	.85	.00	.16
6	1.1	2.6	3.1	.45	.40	2.3	11	4.8	2.1	.80	.00	.00
7	1.1	2.6	3.0	.40	.48	1.9	11	4.0	2.0	.44	.00	.00
8	.93	2.6	3.1	.38	.44	1.5	8.9	3.4	2.1	.43	.00	.00
9	.93	2.5	3.3	.35	.34	2.6	9.5	3.2	2.1	.27	.00	.00
10	.96	2.5	3.4	.38	.35	1.9	7.3	4.1	2.1	.17	.08	.00
11	.93	2.5	2.3	.39	.68	5.0	7.4	6.1	1.7	.09	.93	.00
12	1.1	2.7	1.8	.40	.35	4.2	6.8	7.1	1.4	.06	.96	.00
13	1.2	2.9	1.8	.43	.33	7.3	6.7	11	1.2	1.6	.60	.00
14	1.4	3.0	1.9	.45	.32	5.5	7.4	9.7	2.5	1.2	.60	.00
15	1.3	3.2	1.8	.45	.32	3.5	9.0	8.9	4.1	.81	2.1	.00
16	1.3	3.2	1.5	.43	.35	3.6	10	9.0	6.5	.75	5.4	.17
17	1.3	3.0	1.2	.43	.50	4.8	10	9.3	14	.38	3.7	.13
18	1.4	3.0	1.4	.42	.40	3.9	10	8.3	7.2	.00	2.5	.00
19	1.5	3.0	1.8	.40	.42	3.5	11	6.7	7.0	.00	1.7	.00
20	1.5	2.9	1.9	.42	.94	2.8	10	5.9	5.9	.31	1.7	.00
21	1.4	2.8	1.8	.45	1.1	3.2	10	4.9	6.2	1.1	1.7	.00
22	1.5	2.8	1.7	.48	.96	2.7	8.9	4.3	5.8	2.1	2.1	.00
23	1.6	2.8	1.6	.50	1.6	3.2	7.9	3.7	4.4	1.5	1.4	.00
24	1.7	2.7	1.5	.48	2.4	3.3	6.7	3.4	3.5	1.4	.72	.00
25	1.8	2.7	1.4	.45	2.2	3.0	6.1	3.3	2.8	3.4	.45	.00
26	1.8	2.7	1.3	.43	1.5	2.5	5.7	2.8	2.6	5.6	.18	.00
27	1.7	2.7	1.2	.40	1.5	3.4	6.0	2.6	1.9	4.4	.00	.00
28	1.1	2.7	1.0	.40	2.3	3.2	5.7	2.8	1.6	3.1	.00	.00
29	1.9	2.7	.95	.40	5.2	3.2	5.8	2.5	1.3	2.2	.00	.00
30	2.9	2.8	.72	.45	---	4.0	5.4	2.6	1.1	1.5	.66	.00
31	2.8	---	.44	.47	---	3.9	---	4.3	---	.88	1.8	---
TOTAL	43.55	83.0	62.21	13.33	27.83	101.9	224.7	160.9	116.0	39.65	30.22	4.44
MEAN	1.40	2.77	2.01	.43	.96	3.29	7.49	5.19	3.87	1.28	.97	.15
MAX	2.9	3.2	3.4	.56	5.2	7.3	11	11	14	5.6	5.4	1.4
MIN	.93	2.5	.44	.29	.32	1.5	3.2	2.5	1.1	.00	.00	.00
AC-FT	86	165	123	26	55	202	446	319	230	79	60	8.8

CAL YR 1979 TOTAL 2282.56 MEAN 6.25 MAX 179 MIN .20 AC-FT 4530
WTR YR 1980 TOTAL 907.73 MEAN 2.48 MAX 14 MIN .00 AC-FT 1800

06404998 GRACE COOLIDGE CREEK NEAR GAME LODGE, NEAR CUSTER, SD

LOCATION.--Lat 43°45'40", long 103°21'49", in SW¼NE¼ sec.26, T.3 S., R.6 E., Custer County, Hydrologic Unit 10120109, on right bank 0.3 mi (0.5 km) downstream from bridge on U.S. Highway 16A, 0.9 mi (1.5 km) east of Game Lodge, 1.5 mi (2.4 km) southwest of junction of State Highway 36 and U.S. Highway 16A, and 11.5 mi (18.5 km) east of Custer.

DRAINAGE AREA.--25.2 mi² (65.3 km²).

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,100 ft (1,250 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Considerable losses in sinkholes downstream from gage. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 102 ft³/s (2.89 m³/s) May 18, 1978, gage height, 8.48 ft (2.585 m); maximum gage height, 12.76 ft (3.889 m) Feb. 9, 1979 (backwater from ice); no flow June 5-9, July 6, 8, 11, 19, 1977, for part of June 14, 1979.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 10, 1972, reached a stage of 10.35 ft (3.155 m), from floodmarks, discharge, 709 ft³/s (20.1 m³/s) from slope-area measurement of peak flow.

Flood of June 15, 1976, reached a stage of 10.90 ft (3.322 m), from floodmarks, discharge, 980 ft³/s (27.8 m³/s) on basis of slope-area measurement of 10.35 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15 ft³/s (0.42 m³/s) Oct. 11, gage height, 7.53 ft (2.295 m), no peak above base of 25 ft³/s (0.71 m³/s); maximum gage height, 7.99 ft (2.435 m) Jan. 30 (backwater from ice); minimum daily discharge, 0.25 ft³/s (0.007 m³/s) Sept. 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	1.2	1.1	.76	.50	.58	1.3	.90	2.4	1.1	.35	.74
2	5.8	1.2	1.1	.76	.50	.56	1.2	.74	2.1	1.1	.35	.58
3	5.8	1.1	1.2	.74	.52	.56	1.2	.82	1.7	1.1	.40	.40
4	.52	1.1	1.2	.72	.54	.55	1.4	.82	1.6	.98	.35	.35
5	4.8	1.1	1.1	.70	.56	.58	2.4	.90	1.4	.90	.30	.40
6	4.6	1.1	1.0	.66	.58	.60	3.2	.90	1.1	.90	.35	.35
7	4.6	.98	1.0	.60	.62	.64	2.6	.90	.98	.82	.35	.35
8	4.4	.98	1.1	.55	.62	.66	2.1	.90	1.1	.74	.40	.30
9	4.6	.90	1.1	.50	.60	.68	2.0	.90	1.1	.66	.50	.30
10	4.8	.98	1.0	.50	.58	.74	1.8	1.1	.90	.58	.90	.30
11	13	.90	.90	.50	.58	.98	2.0	1.4	.82	.45	.82	.25
12	13	.90	.86	.50	.56	.98	1.7	2.1	.82	.45	.50	.25
13	12	.82	.86	.52	.54	.90	1.3	2.4	.74	.66	.40	.35
14	2.4	1.1	.90	.56	.52	.98	1.2	2.1	.74	.66	.45	.35
15	1.6	1.1	.90	.60	.52	1.3	1.7	2.0	.82	.66	1.6	.30
16	1.3	1.1	.80	.60	.52	1.2	1.8	2.3	3.4	.58	2.2	.66
17	1.3	1.2	.90	.58	.54	.98	1.8	2.6	3.0	.45	1.1	.66
18	1.2	1.3	1.0	.54	.56	.98	1.7	2.2	2.1	.40	.66	.50
19	1.2	1.3	1.0	.52	.58	.98	1.8	2.0	2.5	.30	.45	.50
20	1.2	1.3	1.0	.50	.62	.90	1.7	1.7	2.5	.74	.50	.50
21	1.3	1.2	1.0	.50	.64	.74	1.7	1.6	3.2	1.1	.50	.45
22	1.3	1.2	.96	.52	.66	.66	1.6	1.4	3.1	.90	.45	.40
23	1.2	1.2	.92	.54	.68	.82	1.6	1.3	3.0	.74	.45	.40
24	1.2	1.2	.90	.56	.68	.90	1.5	1.2	2.4	.98	.45	.50
25	1.1	1.2	.86	.54	.68	.74	1.3	1.2	1.6	1.5	.40	.58
26	.98	1.1	.84	.52	.66	.66	1.2	1.1	1.5	1.5	.35	.50
27	.90	1.1	.82	.48	.64	.98	1.5	.98	1.3	1.2	.35	.50
28	.90	1.1	.80	.47	.62	.98	1.5	.90	1.1	.74	.40	.50
29	1.2	1.1	.80	.47	.60	.82	1.3	.98	1.1	.50	.35	.50
30	1.4	1.1	.78	.47	---	.98	1.2	1.1	1.1	.40	.50	.45
31	1.2	---	.76	.48	---	1.3	---	1.7	---	.40	.82	---
TOTAL	106.60	33.16	29.46	17.46	17.02	25.91	50.3	43.14	51.22	24.19	17.95	13.17
MEAN	3.44	1.11	.95	.56	.59	.84	1.68	1.39	1.71	.78	.58	.44
MAX	13	1.3	1.2	.76	.68	1.3	3.2	2.6	3.4	1.5	2.2	.74
MIN	.52	.82	.76	.47	.50	.55	1.2	.74	.74	.30	.30	.25
AC-FT	211	66	58	35	34	51	100	86	102	48	36	26

CAL YR 1979 TOTAL 1654.43 MEAN 4.53 MAX 104 MIN .06 AC-FT 3280
WTR YR 1980 TOTAL 429.58 MEAN 1.17 MAX 13 MIN .25 AC-FT 852

06405400 GRACE COOLIDGE CREEK NEAR FAIRBURN, SD

LOCATION.--Lat 43°46'13", long 103°20'28", in SE¼SE¼ sec.24, T.3 S., R.6 E., Custer County, Hydrologic Unit 10120109, in Custer State Park, 80 ft (24 m) upstream from bridge on U.S. Highway 16A, 0.2 mi (0.3 km) west of east park boundary, 2.0 (3.2 km) east of Game Lodge and 8.8 mi (14.2 km) northwest of Fairburn.

PERIOD OF RECORD.--May 1978 to September 1980 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 3,820 ft (1,160 m), from topographic map.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 197 ft^3/s (5.58 m^3/s) July 4, 1979, gage height, 51.83 ft (15.798 m); no flow for many days.

EXTREMES FOR CURRENT YEAR.--No flow during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

No flow during year

CHEYENNE RIVER BASIN

06405500 GRACE COOLIDGE CREEK NEAR HERMOSA, SD

LOCATION.--Lat 43°46'29", long 103°19'42", in SW¼NE¼ sec.19, T.3 S., R.7 E., Custer County, Hydrologic Unit 10120109, near center span on downstream side of bridge on State Highway 36, 0.5 mi (0.8 km) east of east boundary of Custer State Park, 2.8 mi (4.5 km) east of Game Lodge, and 8.2 mi (13.2 km) southwest of Hermosa.

DRAINAGE AREA.--27.5 mi^2 (71.2 km^2).

PERIOD OF RECORD.--July 1945 to July 1947, April 1978 to September 1980 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 3,740 ft (1,140 m), from topographic map. Prior to April 1978, nonrecording gage at same site, at different datum.

REMARKS.--Records good. Considerable loss in sinkholes in 3 mi (4.8 km) reach above gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 198 ft^3/s (5.61 m^3/s) June 21, 1947, gage height, 4.90 ft (1.494 m) from high-water mark; no flow for many days.

EXTREMES FOR CURRENT YEAR.--No flow during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

No flow during year

06406000 BATTLE CREEK AT HERMOSA, SD

LOCATION.--Lat 43°49'41", long 103°11'44", in NE¼SW¼SW¼ sec.32, T.2 S., R.8 E., Custer County, Hydrologic Unit 10120109, on right bank 50 ft (15 m) downstream from Chicago and North Western Transportation Company bridge, 0.8 mi (1.3 km) south of Hermosa and 2.9 mi (4.7 km) downstream from Grace Coolidge Creek.

DRAINAGE AREA.--178 mi^2 (461 km^2).

PERIOD OF RECORD.--August to December 1903 (gage heights only), July 1949 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,290 ft (1,000 m), from topographic map. Nonrecording gage, August to December 1903, at site 50 ft (15 m) upstream, July 7, 1949, to Nov. 2, 1950, at site 0.5 mi (0.8 km) upstream, Nov. 3, 1950, to Dec. 6, 1961, at site 170 ft (52 m) downstream, all at different datum. Dec. 7, 1961, to June 10, 1972, water-stage recorder (destroyed by flood), and June 11, 1972, to Aug. 28, 1972, nonrecording gage at site 80 ft (24 m) downstream at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--31 years, 9.32 ft^3/s (0.264 m^3/s), 6,750 acre-ft/yr (8.32 hm^3/yr); median of yearly mean discharges, 6.2 ft^3/s (0.18 m^3/s), 4,500 acre-ft/yr (5.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,400 ft^3/s (606 m^3/s) June 10, 1972, gage height, 17.72 ft (5.401 m), from floodmarks, from rating curve extended above 2,800 ft^3/s (79.3 m^3/s) on basis of contracted-opening and flow-over-railroad embankment measurement of peak flow; no flow at times in 1954-57, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14 ft^3/s (0.26 m^3/s) Oct. 22, gage height, 2.90 ft (0.884 m), no peak above base of 150 ft^3/s (4.25 m^3/s); minimum daily discharge, 0.16 ft^3/s (0.005 m^3/s) June 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.6	11	10	7.0	4.2	3.7	5.4	4.5	4.5	.58	2.3	1.7
2	10	11	10	6.6	3.6	4.1	5.6	4.5	4.1	.63	2.2	1.7
3	10	11	11	6.5	3.3	4.3	5.6	4.2	4.3	.23	2.0	1.9
4	10	11	11	6.4	3.0	4.3	5.6	4.2	3.8	.33	1.9	1.6
5	10	10	10	6.4	2.8	4.2	5.2	4.1	2.5	.47	1.9	1.8
6	9.9	10	10	6.7	3.1	4.2	5.2	4.1	1.3	.39	1.9	1.6
7	10	11	10	5.3	2.7	4.2	5.2	4.0	1.4	.37	1.9	1.6
8	10	10	11	5.5	2.6	4.5	5.2	4.1	1.7	.48	1.2	1.4
9	10	10	11	5.7	2.9	4.3	5.0	4.2	1.8	.80	1.6	1.4
10	10	10	9.9	6.2	3.6	4.1	5.2	4.7	1.7	1.1	2.4	1.6
11	10	11	9.6	6.3	2.7	3.9	5.8	5.1	1.3	1.8	2.7	1.6
12	10	11	8.6	6.7	2.9	4.0	5.6	5.4	1.5	1.4	2.1	1.4
13	11	11	9.5	7.4	3.5	3.9	5.6	6.1	1.4	1.1	1.9	1.9
14	11	10	9.8	6.7	3.1	3.9	5.4	5.5	1.6	1.1	1.9	1.8
15	11	10	9.2	6.1	3.2	3.9	5.2	5.3	1.9	1.2	2.9	1.8
16	11	11	9.2	5.6	3.7	3.9	5.2	5.6	4.7	1.2	4.7	2.4
17	11	11	8.3	5.4	5.6	3.9	5.0	5.5	5.1	1.4	2.8	2.4
18	11	11	9.0	5.5	5.9	3.9	4.8	5.3	3.5	1.1	1.4	2.0
19	11	11	8.9	5.5	5.6	3.9	4.6	4.9	4.0	2.2	2.0	2.4
20	11	10	8.7	5.6	5.0	4.2	4.2	5.1	3.5	2.9	2.2	2.4
21	11	11	8.3	5.9	4.4	4.2	4.0	4.6	3.5	2.1	2.3	2.7
22	11	10	8.2	5.8	4.1	4.4	4.2	1.9	3.7	.63	1.9	2.0
23	11	11	8.2	6.1	4.1	4.2	4.2	1.7	3.2	.32	1.7	2.2
24	11	11	7.7	6.0	4.1	4.2	4.4	1.7	2.7	2.6	1.4	2.5
25	10	11	7.9	5.5	4.0	4.3	4.4	1.8	2.7	3.1	1.2	2.5
26	10	11	7.8	4.8	3.9	4.4	4.4	1.7	.62	3.9	.99	2.7
27	10	10	7.5	4.9	3.6	4.6	4.6	2.0	.39	3.2	1.2	2.8
28	10	9.9	7.0	5.2	3.8	5.2	4.4	2.2	.18	2.8	1.2	2.8
29	10	9.7	7.2	4.6	4.0	5.0	4.5	2.3	.16	2.5	1.0	2.2
30	12	10	6.8	4.2	---	4.8	4.4	2.4	.29	2.4	1.3	1.8
31	11	---	6.5	4.6	---	4.8	---	3.2	---	2.2	1.7	---
TOTAL	324.5	316.6	277.8	180.7	109.4	131.4	148.1	121.9	73.04	46.53	59.79	60.8
MEAN	10.5	10.6	8.96	5.83	3.77	4.24	4.94	3.93	2.43	1.50	1.93	2.03
MAX	12	11	11	7.4	5.9	5.2	5.8	6.1	5.1	3.9	4.7	2.8
MIN	9.6	9.7	6.5	4.2	2.6	3.7	4.0	1.7	.16	.23	.99	1.4
AC-FT	644	628	551	358	217	261	294	242	145	92	119	121

CAL YR 1979 TOTAL 3099.66 MEAN 8.49 MAX 101 MIN .08 AC-FT 6150
WTR YR 1980 TOTAL 1850.56 MEAN 5.06 MAX 12 MIN .16 AC-FT 3670

06408500 SPRING CREEK NEAR HERMOSA, SD

LOCATION.--Lat 43°56'31", long 103°09'32", in SE¼SE¼SE¼ sec.21, T.1 S., R.8 E., Pennington County, Hydrologic Unit 10120109, at left upstream end of county highway bridge, 0.3 mi (0.5 km) upstream from Chicago and North Western Transportation Company bridge and 7.5 mi (12.1 km) north of Hermosa.

DRAINAGE AREA.--199 mi^2 (515 km^2).

PERIOD OF RECORD.--July 1949 to current year.

REVISED RECORDS.--WSP 1729: 1950.

GAGE.--Water-stage recorder. Datum of gage is 3,265.30 ft (995.263 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 30, 1973, nonrecording gage and crest-stage gage 210 ft (64.0 m) upstream, and Mar. 30 to Sept. 30, 1973, water-stage recorder at present site, both at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for period of no gage-height record, June 21 to July 26, and those for winter periods, which are poor. Considerable loss in sinkholes in reach 10 to 15 mi (16 to 24 km) above station. Flow slightly regulated by Lake Sheridan, capacity, 12,657 acre-ft (15.6 hm^3), 24 mi (39 km) above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--31 years, 5.45 ft^3/s (0.154 m^3/s), 3,950 acre-ft/yr (4.87 hm^3/yr); median of yearly mean discharges, 1.6 ft^3/s (0.05 m^3/s), 1,200 acre-ft/yr (1.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft^3/s (379 m^3/s) June 10, 1972, gage height, 13.12 ft (3.999 m), site and datum then in use, from floodmarks, from rating curve extended above 350 ft^3/s (9.91 m^3/s) on basis of contracted-opening measurement of peak flow; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 378 ft^3/s (10.7 m^3/s) June 14, gage height, 4.58 ft (1.400 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.28	.21	.17	.22	.14	.53	.28	.40	.00	.00	.00
2	.00	.33	.24	.15	.24	.20	.54	.28	.25	.00	.00	.00
3	.00	.40	.23	.32	.24	.22	.70	.18	.08	.00	.00	.00
4	.00	.60	.66	.31	.24	.20	.70	.09	.00	.00	.00	.00
5	.00	.70	.36	.31	.24	.20	.62	.18	.00	.00	.00	.00
6	.00	.54	.24	.27	.23	.24	.57	.18	.00	.00	.00	.00
7	.00	.70	.26	.22	.28	.27	.53	.05	.00	.00	.00	.00
8	.00	.70	.13	.16	.28	.28	.40	.09	.00	.00	.00	.00
9	.00	.70	.23	.12	.26	.32	.36	.18	.00	.00	.00	.00
10	.00	.64	.41	.14	.26	.28	.38	.31	.00	.00	.00	.00
11	.00	.70	.29	.16	.24	.66	.95	.52	.00	.00	.00	.00
12	.00	.92	.30	.16	.22	.47	.55	.50	.00	.00	.00	.00
13	.00	.88	.36	.16	.18	.33	.68	.70	.00	.00	.00	.00
14	.00	.88	.38	.18	.18	.36	.58	.70	23	.00	.00	.00
15	.00	1.1	.56	.23	.18	.34	.57	.54	27	.00	.00	.00
16	.00	1.1	.15	.25	.15	.23	.53	.54	32	.00	.00	.00
17	.00	.90	.21	.25	.24	.09	.54	.54	13	.00	.00	.00
18	.00	1.3	.46	.24	.26	.24	.54	.54	8.4	.00	.00	.00
19	.00	.94	.36	.23	.20	.32	.54	.40	7.2	.00	.00	.00
20	.00	1.1	.27	.21	.34	.97	.59	.28	6.7	.00	.00	.00
21	.00	1.0	.24	.25	.22	.54	.54	.28	5.7	.00	.00	.00
22	.00	.91	.24	.30	.20	.40	.54	.23	5.1	.00	.00	.00
23	.00	1.1	.28	.30	.34	.14	.40	.21	3.9	.00	.00	.00
24	.00	1.6	.21	.35	.26	.09	.40	.23	2.8	.00	.00	.00
25	.00	.52	.34	.35	.23	.09	.40	.14	.86	2.8	.00	.00
26	.00	.30	.29	.30	.39	.09	.40	.00	.00	.53	.00	.00
27	.00	.31	.21	.26	.54	.14	.40	.00	.00	.00	.00	.00
28	.00	.35	.17	.23	.34	.37	.54	.00	.00	.00	.00	.00
29	.23	.49	.07	.20	.18	.54	.40	.00	.00	.00	.00	.00
30	.48	.24	.10	.20	---	.54	.40	.00	.00	.00	.00	.00
31	.28	---	.13	.20	---	.41	---	.01	---	.00	.00	---
TOTAL	.99	22.23	8.61	7.18	7.40	9.71	15.82	8.18	136.39	3.33	.00	.00
MEAN	.032	.74	.28	.23	.26	.31	.53	.26	4.55	.11	.000	.000
MAX	.48	1.6	.66	.35	.54	.97	.95	.70	32	2.8	.00	.00
MIN	.00	.24	.07	.12	.15	.09	.36	.00	.00	.00	.00	.00
AC-FT	2.0	44	17	14	15	19	31	16	271	6.6	.00	.00

CAL YR 1979 TOTAL 238.03 MEAN .65 MAX 4.5 MIN .00 AC-FT 472
WTR YR 1980 TOTAL 219.84 MEAN .60 MAX 32 MIN .00 AC-FT 436

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD
(Hydrologic benchmark and radiochemical station)

LOCATION.--Lat 44°00'49", long 103°49'48", in SW¼ sec.25, T.1 N., R.2 E., Pennington County, Hydrologic Unit 10120110, on right bank 50 ft (15 m) downstream from highway bridge, 250 ft (76 m) downstream from South Fork Castle Creek, 600 ft (183 m) upstream from high-water line of Deerfield Reservoir, 2.5 mi (4.0 km) southwest of Deerfield Dam, and 14 mi (23 km) northwest of Hill City.

DRAINAGE AREA.--83 mi² (215 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1948 to current year. Prior to October 1953, published as "above Deerfield Reservoir, near Deerfield".

REVISED RECORDS.--WSP 1917: 1952(M).

GAGE.--Water-stage recorder and grouted-rock control. Altitude of gage is 5,910 ft (1,800 m), from reservoir elevation. Prior to Aug. 31, 1948, nonrecording gage at site 50 ft (15 m) upstream at datum 2.05 ft (0.625 m) higher.

REMARKS.--Records good except those for winter periods, which are poor.

AVERAGE DISCHARGE.--32 years, 10.3 ft³/s (0.292 m³/s), 7,460 acre-ft/yr (9.20 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,120 ft³/s (31.7 m³/s) May 22, 1952, gage height, 5.81 ft (1.771 m), from rating curve extended above slope-area measurement at gage height, 5.67 ft (1.728 m); minimum, 1.2 ft³/s (0.034 m³/s) Apr. 25, 1969; minimum gage height, 1.35 ft (0.411 m) Nov. 12, 1949, Feb. 19, 1954, Mar. 7, 1957, Mar. 29, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28 ft³/s (0.79 m³/s) Apr. 23, Aug. 20; maximum gage height, 2.26 ft (0.689 m) Aug. 20; no peak above base of 100 ft³/s (2.83 m³/s); minimum daily discharge, 4.8 ft³/s (0.14 m³/s) Dec. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	9.0	7.0	8.6	8.5	9.3	11	20	16	8.1	8.4	9.8
2	11	9.0	7.5	8.0	9.0	11	10	20	14	7.9	8.4	9.6
3	10	9.0	8.0	8.0	10	11	10	20	10	7.9	8.6	9.3
4	10	9.0	8.0	8.0	10	10	11	20	13	7.9	8.6	9.3
5	10	9.4	7.5	9.0	9.5	10	14	19	12	8.1	8.8	9.3
6	10	9.6	7.0	9.0	9.0	11	12	19	12	7.9	8.6	9.3
7	9.8	9.8	7.0	8.0	9.0	11	11	19	12	7.7	8.4	9.6
8	9.8	10	7.0	7.0	9.0	11	12	19	12	7.7	8.6	9.6
9	10	10	6.5	6.5	9.5	11	12	18	12	8.1	9.3	9.6
10	10	10	6.5	7.0	9.5	11	12	18	12	8.4	10	9.6
11	10	12	6.0	7.0	9.3	11	12	18	12	8.4	9.0	9.3
12	10	14	6.0	8.0	9.3	11	11	17	11	8.4	8.8	9.3
13	10	16	6.0	9.0	9.6	11	12	17	11	9.0	8.8	9.3
14	10	17	5.5	10	9.3	11	14	13	11	8.8	8.8	9.3
15	10	17	5.0	11	9.3	12	14	16	16	8.8	9.6	9.3
16	9.8	17	4.8	10	6.2	11	16	15	16	8.4	10	10
17	9.8	15	5.0	10	8.1	10	16	15	13	8.4	9.3	10
18	9.8	13	6.0	9.5	9.8	11	18	14	12	8.4	8.8	10
19	10	11	7.0	9.0	10	11	20	14	12	8.4	8.8	9.8
20	10	10	7.0	9.0	10	11	23	14	11	10	14	9.3
21	10	9.6	7.0	9.5	10	10	25	13	11	9.0	10	9.3
22	10	9.2	7.0	10	10	11	25	13	11	8.6	9.6	9.3
23	10	9.0	7.0	11	9.8	11	25	13	11	8.6	9.6	9.3
24	9.8	9.4	8.0	11	9.6	11	24	13	10	8.4	9.3	9.3
25	9.8	9.4	8.0	10	10	11	23	14	8.8	10	9.0	9.3
26	10	9.0	7.6	9.0	10	11	22	13	8.6	9.8	9.0	9.3
27	10	8.0	7.6	8.0	12	10	22	12	7.7	8.8	9.3	9.3
28	10	7.0	7.6	7.0	12	11	21	12	7.7	8.8	9.3	9.0
29	9.6	6.5	7.6	7.0	11	11	21	14	7.7	8.8	9.3	9.0
30	9.0	7.0	7.6	7.5	---	11	21	16	7.7	8.8	9.3	9.0
31	9.0	---	8.0	8.0	---	11	---	16	---	8.4	10	---
TOTAL	308.2	320.9	213.3	269.6	278.3	335.3	500	494	341.2	264.7	287.3	282.7
MEAN	9.94	10.7	6.88	8.70	9.60	10.8	16.7	15.9	11.4	8.54	9.27	9.42
MAX	11	17	8.0	11	12	12	25	20	16	10	14	10
MIN	9.0	6.5	4.8	6.5	6.2	9.3	10	12	7.7	7.7	8.4	9.0
AC-FT	611	637	423	535	552	665	992	980	677	525	570	561

CAL YR 1979 TOTAL 4423.0 MEAN 12.1 MAX 24 MIN 4.8 AC-FT 8770
WTR YR 1980 TOTAL 3895.5 MEAN 10.6 MAX 25 MIN 4.8 AC-FT 7730

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES.--May 1964 to current year.

INSTRUMENTATION.--Recorder with thermograph attachment.

REMARKS.--Periodic samples obtained for analysis of suspended-sediment concentration most years. Monthly samples obtained for water-quality analysis.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 22.0°C July 17, 1969; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 19.0°C June 25, 26; minimum, 0.0°C Oct. 25 to Apr. 17.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT 01...	1340	11	455	8.8	9.5	10.3	K5	K3	40	--	--	--
NOV 14...	1640	17	506	9.1	.0	11.7	40	K5	60	290	27	59
DEC 11...	1015	6.0	539	8.1	.0	11.5	45	K7	K14	280	9	59
JAN 15...	1345	11	485	8.3	1.5	11.1	120	K14	60	270	53	60
FEB 12...	0915	9.3	527	8.1	.0	11.8	K5	K4	K6	280	15	59
MAR 18...	1045	11	484	8.5	1.0	11.5	40	K10	K13	280	25	59
APR 14...	1230	12	508	8.3	2.0	10.6	K9	ND	85	250	15	52
MAY 13...	1115	16	493	8.6	4.0	10.8	K7	K3	K12	260	9	56
JUN 10...	1130	12	438	8.3	12.5	9.2	K20	K25	K40	250	99	52
JUL 09...	1445	8.4	509	8.7	14.5	8.2	--	75	120	250	8	50
AUG 05...	1245	9.3	519	--	12.5	--	20	50	32	--	--	--
SEP 10...	1145	9.8	505	7.2	10.0	9.6	K3	30	38	250	21	51

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT 01...	--	--	--	--	1.1	--	--	--	--	--	--	--
NOV 14...	34	5.6	4	.1	1.7	7.3	260	13	1.5	.1	9.7	266
DEC 11...	32	1.8	3	.0	1.5	3.3	270	6.0	1.0	.2	10	269
JAN 15...	30	5.2	4	.1	1.5	6.7	220	8.4	1.0	.2	9.5	235
FEB 12...	31	6.1	5	.2	1.1	7.2	260	29	.7	.1	10	248
MAR 18...	31	1.3	1	.0	1.1	--	250	7.4	.7	.2	9.1	257
APR 14...	28	1.3	1	.0	1.5	--	230	6.1	.6	.1	8.3	233
MAY 13...	29	1.5	1	.0	1.1	--	250	12	.8	.1	8.3	263
JUN 10...	29	2.9	2	.1	1.1	--	150	6.7	1.3	.4	7.7	202
JUL 09...	30	6.2	5	.2	1.4	--	240	11	7.3	.0	8.1	228
AUG 05...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 10...	30	3.1	3	.1	1.3	--	230	6.9	.8	.2	8.2	274

K Non-ideal colony count.
ND Not detected.

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS PO4) (00660)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 01...	--	--	--	--	--	--	--	--	--	19	.56	84
NOV 14...	282	.36	12.2	.24	.23	.040	.12	.03	.01	46	2.1	66
DEC 11...	275	.37	4.36	.27	.28	.460	1.4	.00	.00	25	.40	80
JAN 15...	249	.32	7.04	.26	.31	.030	.09	.03	.01	31	.93	94
FEB 12...	294	.34	6.13	.22	.22	.010	.03	.00	.00	36	.89	86
MAR 18...	261	.35	7.63	.21	.21	.000	.00	.03	.01	--	--	--
APR 14...	228	.32	7.80	.18	.20	.050	.15	.03	.01	35	1.2	88
MAY 13...	260	.36	11.3	.15	.12	.040	.12	.03	.01	39	1.7	85
JUN 10...	192	.27	6.54	.05	.08	.020	.06	.03	.01	--	--	--
JUL 09...	258	.31	5.17	.00	.04	.010	.03	.00	.00	--	--	--
AUG 05...	--	--	--	--	--	--	--	--	--	184	4.6	33
SEP 10...	240	.37	11.5	.00	.00	.640	2.0	.12	.04	116	4.9	75

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) (01006)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) (01026)	CADMIUM DISSOLVED (UG/L AS CD) (01025)
OCT 01...	1340	11	--	0	--	--	--	0	--	--
APR 14...	1230	12	0	100	50	50	<1	0	0	<1

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE) (01044)	IRON, DISSOLVED (UG/L AS FE) (01046)
OCT 01...	0	--	--	--	0	--	--	130	--	--
APR 14...	0	0	0	<3	0	0	<10	450	430	17

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)
OCT 01...	1	--	--	--	10	--	--	--	--
APR 14...	2	0	<10	<4	30	20	11	.1	<10

DATE	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG) (01076)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
OCT 01...	--	0	--	--	--	--	0	--	--
APR 14...	1	0	0	0	66	<6.0	20	20	<3

< Less than.

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) (01516)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)
OCT												
01...	1340	11	1.3	<8.9	<.4	<6.1	<.3	<4.0	<.4	<3.8	<.4	.06

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)
OCT										
01...	1340	11	.00	.0	.0	0	.00	.1	.00	.0
AUG										
05...	1245	9.3	--	--	--	0	--	--	--	--

DATE	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)
OCT										
01...	.00	.0	.00	.00	.0	.00	.0	.00	.00	.0
AUG										
05...	--	--	--	--	--	--	--	--	--	--

DATE	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39343)	MALA-THION, TOTAL (UG/L) (39530)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)
OCT									
01...	.00	.0	.00	.0	.00	.0	.00	.00	.00
AUG									
05...	--	--	--	--	--	--	--	--	--

DATE	PARA-THION, TOTAL (UG/L) (39540)	TOX-APHENE, TOTAL (UG/L) (39400)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39403)	TOTAL TRI-THION (UG/L) (39786)	PER-THANE TOTAL (UG/L) (39034)	ENDO-SULFAN, TOTAL (UG/L) (39388)	MIREX, TOTAL (UG/L) (39755)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)
OCT									
01...	.00	0	0	.00	.00	.00	.00	.0	0
AUG									
05...	--	--	--	--	--	--	--	--	--

< Less than.

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2	6.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	5.5	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4	6.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	6.5	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6	7.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7	8.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	6.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	4.5	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	7.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	8.0	5.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	6.5	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	6.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	6.5	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	6.5	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16	6.0	5.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17	6.5	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18	6.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19	6.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20	6.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
21	5.0	4.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
22	4.5	3.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
23	4.5	3.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	5.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	5.5	1.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
26	6.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
28	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
29	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
30	.0	.0	.0	.0	.0	.0	.0	.0	---	---	.0	.0
31	.0	.0	---	---	.0	.0	.0	.0	---	---	.0	.0
MONTH	8.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	.0	.0	8.0	4.5	11.5	3.5	13.5	10.0	16.5	9.5	9.5	5.0
2	.0	.0	6.5	4.5	13.5	4.5	16.0	9.0	16.5	10.0	12.0	5.0
3	.0	.0	10.0	4.0	14.5	5.0	16.5	9.5	14.0	9.0	11.5	6.0
4	.0	.0	6.0	4.0	15.5	6.5	16.5	10.0	12.0	6.0	11.5	4.5
5	.0	.0	8.0	4.0	---	6.0	18.0	9.0	14.5	5.5	13.0	4.5
6	.0	.0	9.5	3.5	---	---	18.0	9.0	16.0	7.0	12.0	5.5
7	.0	.0	10.0	4.0	---	---	16.5	8.5	15.0	8.5	14.5	7.0
8	.0	.0	11.0	3.5	---	---	18.0	10.0	13.5	10.0	11.0	8.5
9	.0	.0	9.0	5.0	---	---	17.0	10.0	16.5	10.5	10.5	5.0
10	.0	.0	5.5	4.0	14.5	9.0	18.0	9.5	13.0	9.0	11.0	6.5
11	.0	.0	5.0	3.5	18.0	9.0	18.5	10.5	14.5	6.0	13.5	8.5
12	.0	.0	3.5	3.5	18.0	8.5	16.0	10.5	14.0	10.0	10.0	8.5
13	.0	.0	7.0	3.5	15.0	8.0	15.5	11.0	11.5	9.5	10.0	4.5
14	.0	.0	6.5	3.5	11.5	8.0	18.0	9.5	10.0	8.0	13.0	6.5
15	.0	.0	7.0	3.5	8.5	4.0	15.5	9.5	10.0	9.5	11.5	6.5
16	.0	.0	6.5	4.5	8.5	5.5	17.0	8.0	11.0	9.0	8.0	5.0
17	.0	.0	6.0	4.0	15.0	4.5	16.0	9.0	14.0	6.5	10.5	5.0
18	5.0	4.0	11.5	4.0	15.5	6.5	16.0	9.0	14.5	7.0	10.5	5.0
19	6.0	4.0	9.5	4.0	13.5	8.5	17.0	10.5	14.5	7.0	10.0	8.0
20	6.5	4.0	11.0	4.5	16.5	8.0	14.5	10.0	11.0	8.0	10.0	5.5
21	8.0	4.0	15.0	4.5	16.5	8.5	14.5	9.5	13.0	5.5	7.0	4.5
22	8.5	4.0	16.0	6.5	15.5	8.5	15.0	9.0	14.5	6.0	7.0	4.0
23	7.0	4.0	16.0	7.0	16.0	9.0	16.0	10.0	14.0	9.0	6.5	4.0
24	9.0	4.0	13.0	8.0	17.0	8.0	15.5	10.5	15.0	9.0	5.5	4.0
25	8.0	4.0	12.0	6.5	19.0	9.5	12.0	9.5	14.0	8.5	7.0	4.0
26	5.0	4.5	12.0	4.5	19.0	10.0	14.5	7.0	10.5	8.0	8.5	4.0
27	10.0	4.5	14.5	4.5	16.0	10.0	15.5	8.0	14.0	6.5	8.5	4.0
28	11.0	4.0	14.5	7.0	15.0	6.0	16.5	8.5	14.5	8.0	9.0	4.0
29	6.0	4.5	10.0	5.5	15.5	6.0	16.5	9.0	14.5	6.0	9.0	5.0
30	9.5	4.5	9.0	5.5	16.5	9.5	14.5	11.0	11.5	8.5	---	---
31	---	---	8.0	4.5	---	---	14.5	10.0	10.5	7.0	---	---
MONTH	11.0	.0	16.0	3.5	19.0	3.5	18.5	7.0	16.5	5.5	14.5	4.0

06409500 DEERFIELD RESERVOIR NEAR HILL CITY, SD

LOCATION.--Lat 44°01'41", long 103°47'09", in NE¼SW¼ sec.20, T.1 N., R.3 E., at dam on Castle Creek, Hydrologic Unit 10120110, 0.4 mi (0.6 km) upstream from Dutchman Creek and 12.5 mi (20.1 km) northwest of Hill City.

DRAINAGE AREA.--95 mi^2 (246 km^2), approximately.

PERIOD OF RECORD.--May 1947 to current year (monthend contents only). Some elevations obtained during period of initial filling, December 1945 to May 1947, are available in Bureau of Reclamation files. Prior to October 1953, published as "near Deerfield."

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to July 20, 1964, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 3, 1945; dam completed in 1947. Usable capacity, 15,153 acre-ft (18.7 hm^3) between elevations 5,839 ft (1,779.7 m), lowest outlet, and 5,908 ft (1,800.8 m), crest of spillway. Dead storage below elevation 5,839 ft (1,779.7 m), 565 acre-ft (0.697 hm^3). Figures given herein represent usable contents. Water is used to supplement Rapid City water supply and for irrigation in Rapid Creek basin downstream from Rapid City.

COOPERATION.--Records of elevation and contents furnished by Water and Power Resources Service.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 15,340 acre-ft (18.9 hm^3) May 22, 1952, elevation, 5,908.50 ft (1,800.911 m), from capacity table extended above elevation 5,908.00 ft (1,800.758 m), crest of spillway; minimum observed, 5 acre-ft (6,160 m^3) Oct. 2, 1959, elevation, 5,839.10 ft (1,779.758 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 15,157 acre-ft (18.7 hm^3) Mar. 28 and Apr. 3, elevation, 5,908.01 ft (1,800.761 m); minimum, 12,705 acre-ft (15.7 hm^3) Oct. 29, 30, elevation, 5,901.80 ft (1,798.869 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation	Contents	Change in contents
Sept. 30	5904.05	13566	
Oct. 31	5901.85	12724	-842
Nov. 30	5902.99	13156	+432
Dec. 31	5904.37	13690	+534
CAL YR 1979			-767
Jan. 31	5905.62	14184	+494
Feb. 29	5906.85	14680	+496
Mar. 31	5908.00	15153	+473
Apr. 30	5907.92	15119	-34
May 31	5907.40	14905	-214
June 30	5907.13	14794	-111
July 31	5906.95	14721	-73
Aug. 31	5907.02	14749	+28
Sept. 30	5904.98	13930	-819
WTR YR 1980			+364

06410000 CASTLE CREEK BELOW DEERFIELD DAM, SD

LOCATION.--Lat 44°01'45", long 103°46'53", in NW¼SE¼ sec.20, T.1 N., R.3 E., Pennington County, Hydrologic Unit 10120110, on left bank 200 ft (61 m) upstream from Dutchman Creek, 1,100 ft (335 m) downstream from Deerfield Dam, and 12.5 mi (20.1 km) northwest of Hill City.

DRAINAGE AREA.--96 mi² (249 km²), approximately.

PERIOD OF RECORD.--July 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5,784.52 ft (1,763.122 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Oct. 15, 1947, at site 400 ft (122 m) downstream at datum 0.23 ft (0.070 m) higher. Oct. 15, 1947, to Sept. 1, 1948, at site 550 ft (168 m) downstream at datum 1.77 ft (0.540 m) lower, and Sept. 2, 1948, to Nov. 2, 1971, at site 300 ft (91 m) upstream at datum 4.0 ft (1.22 m) higher.

REMARKS.--Records good. Flow completely regulated by Deerfield Reservoir 1,100 ft (335 m) upstream. (See station 06409500.) Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--34 years, 10.6 ft³/s (0.300 m³/s), 7,680 acre-ft/yr (9.47 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 200 ft³/s (5.66 m³/s) May 22, 1952; maximum gage height, 3.87 ft (1.180 m) May 23, 1952 (backwater from spillway overflow), site and datum then in use; no flow at times in 1948, 1950-60.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43 ft³/s (1.22 m³/s) Sept. 8, gage height, 3.91 ft (1.192 m); minimum daily, 2.4 ft³/s (0.07 m³/s) Feb. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	2.5	2.7	2.5	2.6	2.6	12	20	19	12	7.9	10
2	30	2.5	2.7	2.5	2.6	2.6	12	20	19	12	7.7	11
3	28	2.5	2.7	2.5	2.5	2.7	13	20	19	11	7.9	11
4	27	2.5	2.7	2.5	2.5	2.6	17	20	19	9.4	8.0	11
5	27	2.5	2.7	2.5	2.5	2.6	20	19	19	9.4	7.9	19
6	27	2.5	2.7	2.5	2.5	2.6	19	19	19	9.1	7.9	24
7	26	2.5	2.6	2.5	2.6	2.6	18	20	19	9.1	8.6	24
8	26	2.5	2.6	2.5	2.5	2.6	19	20	19	9.1	9.1	21
9	27	2.5	2.6	2.5	2.5	2.6	19	20	19	9.0	9.1	24
10	27	2.5	2.6	2.5	2.5	2.7	20	20	18	9.2	8.9	24
11	27	2.6	2.6	2.5	2.5	2.7	21	20	13	9.1	9.3	24
12	27	2.6	2.6	2.5	2.5	2.6	21	20	13	9.1	9.4	24
13	27	2.6	2.6	2.5	2.5	2.5	22	20	13	9.3	9.4	24
14	27	2.6	2.6	2.5	2.5	2.5	22	20	13	9.2	9.4	24
15	27	2.5	2.5	2.5	2.5	2.5	19	20	13	9.0	9.6	23
16	27	2.5	2.5	2.5	2.5	2.5	17	20	13	8.7	9.6	23
17	27	2.5	2.5	2.5	2.5	2.5	16	20	13	8.8	9.4	23
18	27	2.5	2.5	2.5	2.4	2.5	16	20	13	8.4	9.6	23
19	28	2.5	2.5	2.5	2.5	2.6	16	20	12	8.3	9.6	23
20	30	2.6	2.5	2.5	2.5	2.7	16	20	12	8.3	9.6	23
21	29	2.6	2.5	2.5	2.5	2.8	16	20	12	8.4	9.6	23
22	28	2.6	2.5	2.5	2.5	2.9	16	20	12	8.3	9.9	23
23	28	2.6	2.5	2.5	2.6	3.0	17	20	12	8.3	9.7	22
24	28	2.7	2.5	2.5	2.5	3.5	21	20	12	8.1	9.6	23
25	28	2.7	2.5	2.5	2.6	5.1	20	20	12	8.3	9.9	23
26	28	2.7	2.5	2.5	2.6	7.2	20	19	12	8.3	10	23
27	28	2.7	2.5	2.5	2.6	7.8	20	19	12	8.1	10	23
28	28	2.7	2.5	2.5	2.6	10	20	19	12	8.1	10	23
29	28	2.7	2.5	2.5	2.6	10	20	19	12	8.2	10	23
30	11	2.7	2.5	2.5	---	10	20	19	12	7.9	10	23
31	2.5	---	2.5	2.6	---	10	---	19	---	8.0	10	---
TOTAL	814.5	77.2	79.5	77.6	73.3	124.1	545	612	437	277.5	286.6	642
MEAN	26.3	2.57	2.56	2.50	2.53	4.00	18.2	19.7	14.6	8.95	9.25	21.4
MAX	30	2.7	2.7	2.6	2.6	10	22	20	19	12	10	24
MIN	2.5	2.5	2.5	2.5	2.4	2.5	12	19	12	7.9	7.7	10
AC-FT	1620	153	156	154	145	246	1080	1210	867	550	568	1270

CAL YR 1979 TOTAL 5233.3 MEAN 14.3 MAX 37 MIN 1.7 AC-FT 10380
WTR YR 1980 TOTAL 4046.3 MEAN 11.1 MAX 30 MIN 2.4 AC-FT 8030

06410500 RAPID CREEK ABOVE PACTOLA RESERVOIR, AT SILVER CITY, SD

LOCATION.--Lat 44°05'05", long 103°34'48", in SW¼SE¼ sec.36, T.2 N., R.4 E., Pennington County, Hydrologic Unit 10120110, on right bank 0.8 mi (1.3 km) west of Silver City and 3.0 mi (4.8 km) downstream from Slate Creek.

DRAINAGE AREA.--292 mi^2 (756 km^2).

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,620.00 ft (1,408.176 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

REMARKS.--Records good except those for period of no gage-height record Mar. 28 to Apr. 27, and winter periods, which are poor. Flow regulated by Deerfield Reservoir on Castle Creek since December 1945 (see station 06409500). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--27 years, 40.6 ft^3/s (1.150 m^3/s), 29,410 acre-ft/yr (36.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,060 ft^3/s (58.3 m^3/s) May 15, 1965, gage height, 10.44 ft (3.182 m); from rating curve extended above 1,000 ft^3/s (28.3 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 4.0 ft^3/s (0.11 m^3/s) Jan. 20, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 75 ft^3/s (2.12 m^3/s) May 11; gage height, 4.80 ft (1.463 m); maximum gage height, 5.65 ft (1.722 m) Dec. 29 (backwater from ice); minimum daily discharge, 7.0 ft^3/s (0.20 m^3/s) Dec. 17.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 5 to June 3, Aug. 29 to Sept. 11; stage-discharge relation affected by ice Nov. 21 to Mar. 27)

4.3	14	4.7	48
4.5	28	5.0	88

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	22	16	11	14	21	35	57	66	26	17	24
2	45	24	16	11	14	19	38	56	58	26	17	23
3	45	31	15	11	14	18	40	56	51	26	17	22
4	42	24	14	11	14	20	41	54	45	24	17	22
5	41	23	13	10	15	20	43	61	43	24	16	21
6	40	21	12	9.8	15	20	45	55	49	23	15	29
7	40	23	11	9.2	15	20	49	53	46	21	15	33
8	39	23	10	8.8	15	20	50	52	45	21	16	33
9	40	23	8.5	9.6	15	20	52	52	46	21	17	31
10	40	31	8.2	10	14	20	56	61	42	21	20	33
11	39	26	8.5	12	14	20	56	70	36	20	18	33
12	40	22	8.8	13	14	20	59	68	32	21	17	33
13	40	28	8.7	15	14	20	60	69	32	22	17	34
14	40	35	8.7	17	14	21	63	65	33	22	19	33
15	39	24	8.6	20	14	23	66	61	41	22	20	32
16	40	26	8.0	18	14	22	66	62	52	20	22	35
17	40	28	7.0	16	14	22	66	61	41	19	21	34
18	41	22	8.2	17	15	22	66	59	36	19	19	32
19	40	21	9.4	17	16	22	66	56	47	18	18	32
20	42	21	11	17	17	22	66	54	39	19	30	31
21	45	21	11	18	17	22	66	50	36	20	30	32
22	44	20	11	17	17	22	65	46	36	18	22	32
23	42	20	11	17	17	23	64	46	33	20	21	32
24	41	19	11	15	16	23	63	47	31	24	20	31
25	40	18	11	14	17	23	62	50	30	21	19	31
26	40	17	11	13	18	22	60	46	28	24	20	31
27	39	17	11	13	20	22	60	44	26	22	21	30
28	39	16	11	13	22	24	59	44	26	19	20	30
29	41	16	11	13	23	26	57	46	26	18	20	29
30	41	16	11	13	---	28	58	58	26	17	22	31
31	29	---	11	13	---	32	---	60	---	17	25	---
TOTAL	1258	678	331.6	422.4	458	679	1697	1719	1178	655	608	909
MEAN	40.6	22.6	10.7	13.6	15.8	21.9	56.6	55.5	39.3	21.1	19.6	30.3
MAX	45	35	16	20	23	32	66	70	66	26	30	35
MIN	29	16	7.0	8.8	14	18	35	44	26	17	15	21
AC-FT	2500	1340	658	838	908	1350	3370	3410	2340	1300	1210	1800

CAL YR 1979 TOTAL 14034.6 MEAN 38.5 MAX 86 MIN 7.0 AC-FT 27840
WTR YR 1980 TOTAL 10593.0 MEAN 28.9 MAX 70 MIN 7.0 AC-FT 21010

06411000 PACTOLA RESERVOIR NEAR SILVER CITY, SD

LOCATION.--Lat 44°04'20", long 103°29'17", in NE¼SW¼ sec.2, T.1 N., R.5 E., Pennington County, Hydrologic Unit 10120110, in outlet works of dam on Rapid Creek, 3.8 mi (6.1 km) east of Silver City.

DRAINAGE AREA.--319 mi^2 (826 km^2).

PERIOD OF RECORD.--August 1956 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation datum). Prior to Feb. 18, 1970, nonrecording gage at same site and datum.

REMARKS.--Reservoir formed by an earthfill dam completed August 1956. Storage began August 22, 1956. Conservation capacity, 54,960 acre-ft (67.8 hm^3) between elevations 4,456.1 ft (1,358.22 m) and 4,580.2 ft (1,396.04 m). Combined dead and inactive storage below elevation 4,456.1 ft (1,358.22 m) is 1,003 acre-ft (1.24 hm^3). Flood storage capacity, 43,050 acre-ft (53.1 hm^3) between elevations 4,580.2 ft (1,396.04 m) and 4,621.5 ft (1,408.63 m), crest of spillway. Surcharge capacity, 15,780 acre-ft (19.5 hm^3) between elevations 4,621.5 ft (1,408.63 m) and 4,633.7 ft (1,412.35 m), maximum pool elevation. Figures given herein represent contents above elevation 4,456.1 ft (1,358.22 m). Reservoir provides flood control and water for municipal and irrigation uses.

COOPERATION.--Records of elevations and contents furnished by Water and Power Resources Service.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 60,970 acre-ft (75.2 hm^3) May 19, 1964, elevation, 4,585.87 ft (1,397.773 m); minimum observed since initial filling, 42,122 acre-ft (51.9 hm^3) Sept. 30, 1974, elevation, 4,563.72 ft (1,391.022 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 54,806 acre-ft (67.6 hm^3) May 17, 18, elevation, 4,580.02 ft (1,395.990 m); minimum, 45,611 acre-ft (56.2 hm^3) Sept. 14, elevation, 4,568.52 ft (1,392.485 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation	Contents	Change in contents
Sept. 30	4578.70	53681	
Oct. 31	4579.70	54533	+852
Nov. 30	4578.83	53791	-742
Dec. 31	4578.11	53184	-607
CAL YR 1979			-447
Jan. 31	4577.45	52633	-551
Feb. 29	4577.44	52624	-9
Mar. 31	4578.21	53268	+644
Apr. 30	4579.94	54738	+1470
May 31	4578.70	53681	-1057
June 30	4578.14	53209	-472
July 31	4572.86	48921	-4288
Aug. 31	4569.00	45968	-2953
Sept. 30	4568.77	45797	-171
WTR YR 1980			-7884

06411500 RAPID CREEK BELOW PACTOLA DAM, SD

LOCATION.--Lat 44°04'36", long 103°28'54", in SW¼NE¼ sec.2, T.1 N., R.5 E., Pennington County, Hydrologic Unit 10120110, on right bank 2,000 ft (610 m) downstream from Pactola Dam, 3.9 mi (6.3 km) upstream from Deer Creek and 13 mi (21 km) west of Rapid City.

DRAINAGE AREA.--320 mi² (829 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1928 to September 1932 (combined records of Creek and Dakota Power and Light Co. flume), July 1946 to current year. Prior to October 1953, published as "near Pactola." Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1931(M).

GAGE.--Water-stage recorder; concrete control since Oct. 16, 1962. Datum of gage is 4,406.00 ft (1,342.949 m) National Geodetic Vertical Datum of 1929, Bureau of Reclamation bench mark. Apr. 19, 1929, to June 30, 1932, nonrecording gage at site 3,500 ft (1,070 m) upstream at different datum. July 24, 1946, to Aug. 24, 1947, nonrecording gage and Aug. 25, 1947, to Nov. 18, 1953, water-stage recorder, at site 2 mi (3 km) upstream at different datum.

REMARKS.--Records good. Flow regulated by dam on Castle Creek since December 3, 1945 (see station 06409500), and completely regulated by Pactola Reservoir 2,000 ft (610 m) upstream since Aug. 22, 1956 (see station 06411000).

AVERAGE DISCHARGE.--38 years, 44.4 ft³/s (1.257 m³/s), 32,170 acre-ft/yr (39.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,170 ft³/s (61.5 m³/s) May 22, 1952, gage height, 6.74 ft (2.054 m), site and datum then in use; no flow Oct. 11-17, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 118 ft³/s (3.34 m³/s) July 15; minimum daily, 17 ft³/s (0.48 m³/s) Feb. 26, 27, Mar. 4, 5.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

7.2	17	7.8	77
7.4	29	8.0	120
7.6	49		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	30	27	27	18	18	19	46	92	61	86	46
2	25	30	27	27	18	18	20	47	71	61	86	46
3	25	30	27	27	18	18	20	47	58	61	86	40
4	25	30	27	27	18	17	20	52	58	59	96	36
5	25	29	27	27	19	17	20	56	62	59	106	36
6	25	29	27	27	18	18	20	61	57	59	106	35
7	25	29	27	28	19	18	20	65	53	65	106	34
8	25	29	27	28	19	18	20	65	53	71	110	34
9	25	29	27	28	19	18	19	65	52	81	110	33
10	25	29	27	28	19	19	19	66	52	94	113	32
11	26	30	26	28	19	19	19	66	52	98	90	33
12	26	30	27	28	19	19	19	56	57	103	76	34
13	26	30	27	28	18	19	19	53	62	103	72	33
14	26	30	27	28	18	19	19	53	61	110	71	34
15	26	30	27	28	18	18	19	53	28	118	56	34
16	26	30	27	26	18	19	20	53	28	96	47	30
17	26	30	26	26	18	19	32	53	28	86	47	28
18	26	30	26	26	18	19	41	53	28	86	47	28
19	26	28	26	26	18	19	41	59	28	86	47	28
20	26	28	27	26	18	19	41	65	28	85	46	26
21	25	28	28	26	18	19	59	66	28	83	46	26
22	24	28	28	26	18	19	72	72	28	83	42	26
23	24	28	28	22	18	19	72	88	28	83	39	26
24	23	28	28	19	18	19	71	101	28	83	39	23
25	23	28	28	18	18	19	54	98	28	83	38	21
26	23	28	26	18	17	19	47	98	36	85	38	21
27	23	28	27	18	17	19	47	98	65	86	37	21
28	23	28	27	18	18	19	46	96	72	86	37	20
29	24	27	27	18	18	19	46	96	72	86	37	20
30	23	27	27	18	---	19	46	94	65	88	42	20
31	25	---	27	18	---	19	---	92	---	88	46	---
TOTAL	7[illegible]0	868	839	763	527	577	1027	2133	1458	2576	2045	904
MEAN	2[illegible].2	28.9	27.1	24.6	18.2	18.6	34.2	68.8	48.6	83.1	66.0	30.1
MAX	35	30	28	28	19	19	72	101	92	118	113	46
MIN	23	27	26	18	17	17	19	46	28	59	37	20
AC-FT	1550	1720	1660	1510	1050	1140	2040	4230	2890	5110	4060	1790

CAL YR 1979 TOTAL 14629 MEAN 40.1 MAX 101 MIN 23 AC-FT 29020
WTR YR 1980 TOTAL 14497 MEAN 39.6 MAX 118 MIN 17 AC-FT 28750

06411500 RAPID CREEK BELOW PACTOLA DAM, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURES: October 1968 to September 1972, October 1973 to September 1975, October 1977 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 455 micromhos Feb. 3, 1979; minimum daily, 165 micromhos Nov. 6, 1979.
WATER TEMPERATURES: Maximum daily, 10.5°C July 27, Sept. 5-7, 14, 1978; minimum daily, 0.0°C on several days during December 1968 and on Jan. 29, 1979.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 395 micromhos Feb. 12-14, 17, 18, 24; minimum daily, 165 micromhos Nov. 6.
WATER TEMPERATURES: Maximum daily, 8.0°C Oct. 13; minimum daily, 0.0°C Jan. 29.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT 03...	1100	24	353	8.4	8.0	190	37	42	20	4.3
NOV 16...	0830	29	361	8.2	6.0	200	55	44	23	7.6
DEC 12...	1045	27	361	8.3	4.0	190	36	40	21	4.3
JAN 16...	1145	26	360	8.4	3.5	180	27	38	20	3.5
FEB 12...	1500	19	377	8.5	4.0	200	38	43	22	4.0
MAR 19...	1345	19	380	8.2	4.5	200	45	42	22	3.2
APR 16...	1405	20	390	8.4	6.5	200	45	42	22	3.4
MAY 15...	1210	52	385	8.5	5.5	180	30	39	20	2.8
JUN 10...	1200	54	422	8.4	5.0	180	34	39	21	3.0
JUL 15...	1200	122	343	8.3	6.0	190	36	40	21	2.8
AUG 06...	1150	105	411	7.6	6.0	170	15	37	20	5.1
SEP 02...	1335	46	365	8.3	7.0	180	20	39	20	3.0

06411500 RAPID CREEK BELOW PACTOLA DAM, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT									
03...	8	.1	2.5	6.6	150	43	1.2	.2	9.1
NOV									
16...	7	.2	3.2	11	150	42	1.5	.2	9.9
DEC									
12...	8	.1	2.6	6.9	150	37	1.1	.2	8.3
JAN									
16...	7	.1	2.7	6.2	150	39	1.1	.3	8.4
FEB									
12...	4	.1	2.7	6.7	160	41	1.1	.2	8.8
MAR									
19...	3	.1	2.4	--	150	39	1.1	.2	8.6
APR									
16...	4	.1	2.6	--	150	42	1.2	.3	8.6
MAY									
15...	3	.1	2.5	--	150	37	.8	.3	7.8
JUN									
10...	3	.1	2.8	--	150	37	.9	.1	7.9
JUL									
15...	3	.1	2.7	--	150	37	1.0	.4	8.3
AUG									
06...	6	.2	2.6	--	160	36	1.5	.2	8.2
SEP									
02...	3	.1	2.5	--	160	37	1.4	.2	8.2

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	380	240	320	365	390	386	368	333	350	346	355	350
2	370	180	310	360	385	387	373	321	363	355	355	349
3	370	175	310	360	385	390	369	332	364	338	361	350
4	370	---	310	360	385	390	368	329	365	328	357	344
5	370	187	310	360	380	390	369	330	365	330	---	355
6	375	165	309	360	385	390	371	329	362	345	357	352
7	---	---	310	360	390	392	369	329	365	340	363	351
8	---	280	309	365	390	392	372	319	360	353	352	352
9	---	320	310	360	390	390	369	329	369	351	358	356
10	---	---	310	360	390	390	373	---	367	353	357	352
11	---	---	310	360	390	388	370	330	368	340	360	356
12	---	---	310	365	395	390	370	326	369	350	362	355
13	370	---	310	360	395	392	370	330	368	350	367	---
14	370	---	309	365	395	391	372	329	369	350	360	---
15	370	---	310	360	390	388	371	329	369	352	361	---
16	370	255	310	360	390	387	370	330	365	349	352	351
17	370	250	310	365	395	389	374	327	370	353	359	353
18	370	315	310	376	395	389	370	328	369	350	366	357
19	370	312	310	370	390	387	---	330	370	350	363	355
20	370	310	309	370	390	385	372	327	368	352	361	355
21	370	320	311	370	390	382	371	329	367	354	360	357
22	370	300	311	365	390	382	368	328	365	351	362	352
23	375	265	308	370	390	384	369	326	365	351	362	355
24	370	---	310	370	395	383	368	331	365	349	366	356
25	375	362	311	370	390	385	364	329	363	350	363	355
26	375	365	310	370	390	383	371	326	365	352	356	359
27	---	365	310	375	390	380	370	327	362	351	359	359
28	---	365	308	375	390	382	368	327	364	351	362	357
29	370	365	310	375	285	380	368	328	364	351	364	357
30	375	365	309	370	---	381	370	329	364	352	358	357
31	375	---	310	375	---	382	---	329	---	352	358	---
MEAN	372	289	310	366	386	387	370	328	365	348	360	354

06411500 RAPID CREEK BELOW PACTOLA DAM, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT									
03...	213	.29	13.8	.03	.000	.010	.00	.00	--
NOV									
16...	222	.30	17.4	.08	.020	.020	.05	.15	--
DEC									
12...	205	.28	14.9	.03	.010	.000	.01	.03	--
JAN									
16...	203	.28	14.3	.04	.020	.040	.04	.12	--
FEB									
12...	220	.30	11.3	.11	.010	.010	.00	.00	--
MAR									
19...	209	.28	10.7	.03	.000	.020	.01	.03	--
APR									
16...	212	.29	11.4	.02	.010	.010	.00	.00	--
MAY									
15...	201	.27	28.2	.05	.010	.010	.01	.03	--
JUN									
10...	202	.27	29.5	.06	.000	.000	.01	.03	--
JUL									
15...	203	.28	66.9	.00	.020	.010	.00	.00	--
AUG									
06...	207	.28	58.7	.00	.030	.030	.00	.00	--
SEP									
02...	208	.28	25.8	.00	.070	.010	.00	.00	--

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	4.5	3.5	2.0	.5	1.0	2.0	4.5	5.0	5.0	5.5	6.5
2	5.5	4.5	3.5	2.0	.5	1.5	2.5	4.0	4.5	5.0	6.5	5.5
3	5.5	5.0	3.5	1.5	1.0	1.0	2.5	4.5	4.5	5.5	6.0	6.0
4	5.0	---	4.5	1.5	1.5	.5	2.5	5.5	4.5	5.5	5.5	6.0
5	5.5	5.5	3.5	2.0	1.5	.5	2.5	4.0	4.5	5.5	---	5.5
6	5.5	6.0	3.5	1.0	.5	1.5	4.0	4.0	4.5	6.0	6.5	6.5
7	---	---	3.0	1.5	1.0	1.0	3.5	3.5	4.5	5.0	5.5	7.0
8	---	5.0	3.5	1.0	.5	1.5	3.0	3.5	5.5	5.0	6.5	6.0
9	---	4.5	3.5	1.0	1.5	2.0	2.5	4.5	4.5	6.0	6.0	5.5
10	---	---	3.5	3.0	1.0	1.5	3.0	---	4.5	5.0	6.0	6.0
11	---	---	2.0	1.5	1.0	1.5	3.0	4.0	4.5	6.0	5.5	6.5
12	---	---	2.0	2.5	1.0	1.5	3.5	4.0	5.5	5.5	6.0	6.5
13	8.0	---	2.5	2.5	1.0	1.5	3.0	3.5	4.5	5.5	5.5	---
14	5.5	---	2.5	2.5	1.0	1.5	2.5	3.5	4.5	5.0	5.5	---
15	5.5	---	2.5	2.5	.0	2.5	3.0	3.5	5.5	5.5	5.5	---
16	6.0	6.0	1.5	2.5	.5	2.0	3.0	4.0	4.5	5.0	6.0	6.0
17	5.5	7.5	2.0	2.0	1.0	1.5	3.0	4.5	5.5	5.0	6.0	6.0
18	6.0	5.5	3.0	2.0	1.5	2.5	3.5	4.5	4.5	5.5	6.0	6.0
19	6.0	6.0	2.0	2.0	1.5	2.0	---	4.0	5.0	5.5	6.0	6.0
20	6.0	5.5	2.5	2.0	1.0	2.0	5.0	4.5	5.0	5.5	6.0	6.5
21	5.5	5.0	2.0	2.5	1.0	2.0	3.5	4.5	5.0	5.5	5.5	6.0
22	5.0	4.5	2.0	2.0	1.0	3.5	4.5	4.5	5.5	5.5	5.5	5.5
23	5.0	4.5	2.5	2.0	1.5	4.0	3.5	4.5	5.0	5.5	7.0	6.0
24	5.5	---	2.5	3.0	1.5	4.0	4.0	5.0	6.5	5.5	6.5	5.5
25	5.5	5.0	2.5	2.0	.5	2.0	3.5	5.0	5.0	5.5	6.0	7.0
26	6.0	4.5	2.0	1.5	1.0	2.0	3.5	4.5	5.0	6.0	6.0	5.5
27	---	4.0	1.5	1.0	1.5	1.5	4.0	4.5	6.0	6.0	6.0	6.0
28	---	4.0	1.5	.5	1.5	2.0	3.5	4.5	5.5	5.5	6.0	5.5
29	6.0	3.0	1.5	.0	.5	3.5	3.5	4.5	5.5	6.5	6.0	6.0
30	5.0	3.5	1.5	.5	---	3.0	3.5	4.5	5.0	5.5	7.5	6.0
31	5.0	---	1.5	.5	---	2.5	---	4.5	---	5.5	6.0	---
MEAN	5.5	5.0	2.5	1.5	1.0	2.0	3.5	4.5	5.0	5.5	6.0	6.0

06412500 RAPID CREEK ABOVE CANYON LAKE, NEAR RAPID CITY, SD

LOCATION.--Lat 44°03'04", long 103°18'47", in NE¼NE¼ sec.18, T.1 N., R.7 E., Pennington County, Hydrologic Unit 10120110, on right bank at bridge on State Highway 40, 1.0 mi (1.6 km) southwest of city limits of Rapid City and 2.8 mi (4.5 km) downstream from Victoria Creek.

DRAINAGE AREA.--371 mi² (961 km²).

PERIOD OF RECORD.--July 1946 to current year.

GAGE.--Water-stage recorder. Concrete control Oct. 17, 1962, to Nov. 2, 1967 (destroyed). Datum of gage is 3,405.39 ft (1,037.963 m) National Geodetic Vertical Datum of 1929, levels by Corps of Engineers. Prior to Oct. 6, 1947, nonrecording gage, Oct. 6, 1947, to Nov. 2, 1967, and Oct. 1, 1968, to Sept. 30, 1976, water-stage recorder all at datum 2.0 ft (0.61 m) higher. Nov. 3, 1967, to Sept. 30, 1968, nonrecording gage at site 0.2 mi (0.3 km) downstream at datum 1.12 ft (0.341 m) lower.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by dam on Castle Creek since December 1945 (see station 06409500) and by Pactola Reservoir 21 mi (34 km) upstream since August 1956 (see station 06411000). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--34 years, 39.6 ft³/s (1.121 m³/s), 28,690 acre-ft/yr (35.4 hm³/yr); median of yearly mean discharges, 36 ft³/s (1.02 m³/s), 26,100 acre-ft/yr (32 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,200 ft³/s (884 m³/s) June 9, 1972, gage height, 17.77 ft (5.416 m), present datum, from floodmarks, from rating curve extended above 1,300 ft³/s (36.8 m³/s) on basis of slope-area measurement of peak flow; no flow at times in 1950-51, 1957-60, 1962-63.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 119 ft³/s (3.37 m³/s) July 16, gage height, 3.74ft (1.140 m); minimum daily, 7.5 ft³/s (0.21 m³/s) Nov. 27.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 23 to Dec. 10, Dec. 12, 13, 15-18, 23-25, Dec. 27 to Jan. 14, Jan. 17-23, Jan. 25 to Feb. 20, Feb. 23-27, Feb. 29 to Mar. 9)

2.9	7.2
3.0	14
3.7	117

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	20	18	19	14	10	11	46	100	56	79	37
2	24	23	21	18	15	9.5	12	46	94	55	79	37
3	20	24	23	18	15	9.0	12	46	67	55	79	37
4	19	24	25	17	14	8.5	12	49	64	55	84	30
5	19	26	22	17	14	8.0	13	56	67	56	94	27
6	18	26	20	20	13	8.0	13	60	67	58	98	27
7	18	26	17	19	13	8.5	13	67	60	60	98	27
8	18	26	17	18	12	8.5	13	67	60	64	98	27
9	17	26	17	25	14	9.0	13	66	58	70	102	27
10	17	24	17	30	13	11	13	68	56	90	102	27
11	15	24	17	27	12	14	13	68	55	94	97	23
12	15	24	17	28	13	9.9	13	70	56	102	74	26
13	15	24	18	28	14	11	13	56	64	107	70	28
14	15	23	22	30	14	9.9	14	52	73	108	67	28
15	15	23	24	27	14	12	14	50	49	114	66	28
16	15	24	20	23	17	11	14	49	36	110	43	28
17	17	24	23	21	16	8.6	14	49	30	92	37	22
18	17	24	27	20	15	7.9	30	49	27	90	35	20
19	17	23	27	18	15	9.2	35	50	26	90	34	20
20	18	22	26	17	15	8.6	37	68	22	91	34	18
21	18	19	26	17	12	9.7	42	72	20	88	34	17
22	17	18	23	17	11	9.9	76	76	20	86	32	17
23	17	18	22	17	11	11	78	86	19	85	24	17
24	17	18	20	18	12	9.9	76	102	14	84	24	18
25	17	18	19	18	12	9.9	73	105	13	84	24	13
26	15	12	19	13	13	9.9	50	105	12	84	24	12
27	15	7.5	19	12	11	8.6	49	105	32	82	24	11
28	15	9.0	19	12	11	9.9	48	103	61	80	26	11
29	18	13	19	12	11	9.9	48	100	64	82	26	9.9
30	19	16	19	13	---	11	48	100	64	82	26	9.2
31	18	---	19	13	---	11	---	100	---	84	35	---
TOTAL	567	628.5	642	602	386	302.8	910	2186	1450	2538	1769	679.1
MEAN	18.3	21.0	20.7	19.4	13.3	9.77	30.3	70.5	48.3	81.9	57.1	22.6
MAX	52	26	27	30	17	14	78	105	100	114	102	37
MIN	15	7.5	17	12	11	7.9	11	46	12	55	24	9.2
AC-FT	1120	1250	1270	1190	766	601	1800	4340	2880	5030	3510	1350

CAL YR 1979 TOTAL 13369.5 MEAN 36.6 MAX 132 MIN 7.5 AC-FT 26520
WTR YR 1980 TOTAL 12660.4 MEAN 34.6 MAX 114 MIN 7.5 AC-FT 25110

06413700 RAPID CREEK ABOVE WATER TREATMENT PLANT, AT RAPID CITY, SD

LOCATION.--Lat 44°04'29", long 103°15'34", in SW¼SW¼NE¼ sec.3, T.1 N., R.7 E., Pennington County, Hydrologic Unit 10120110, on right bank at downstream side of foot bridge in Sioux Park, and 700 ft (213 m) downstream from Sheridan Lake road.

DRAINAGE AREA.--403 mi^2 (1,043 km^2).

PERIOD OF RECORD.--May 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,266.31 ft (995.571 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several small diversions above station to municipal park pools and for irrigation of about 320 acres (130 hm^2). Flow regulated by Pactola Reservoir 24 mi (39 km) upstream (see station 06411000).

EXTREMES FOR CURRENT PERIOD.--Maximum discharge during period, 247 ft^3/s (7.00 m^3/s) July 12, gage height, 6.13 ft (1.868 m); minimum daily discharge, 21 ft^3/s (0.59 m^3/s) Sept. 30.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 22 to Sept. 2)

4.3	15
4.7	52
5.7	188

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								---	105	68	87	52
2								---	99	68	84	51
3								---	67	68	83	51
4								---	61	67	84	40
5								---	63	65	105	35
6								---	69	65	105	35
7								---	61	62	104	36
8								---	58	76	103	35
9								---	57	80	119	40
10								---	54	101	117	42
11								---	53	103	112	37
12								---	52	127	78	36
13								---	64	122	70	40
14								---	84	120	71	38
15								---	79	133	66	37
16								---	57	128	60	42
17								---	44	96	49	36
18								---	40	95	42	34
19								---	40	95	39	35
20								---	38	102	45	34
21								---	41	100	43	30
22								---	39	94	43	30
23								---	34	93	43	31
24								---	30	94	42	35
25								---	30	101	40	31
26								---	27	102	41	27
27								---	40	95	43	25
28								101	73	93	41	25
29								104	76	90	39	22
30								106	77	88	43	21
31								111	---	88	50	---
TOTAL								---	1712	2881	2111	1063
MEAN								---	57.1	92.9	68.1	35.4
MAX								---	105	133	119	52
MIN								---	27	62	39	21
AC-FT								---	3400	5710	4190	2110

06414000 RAPID CREEK AT RAPID CITY, SD

LOCATION.--Lat 44°05'09", long 103°14'31", in NE¼SE¼SW¼ sec.35, T.2 N., R.7 E., Pennington County, Hydrologic Unit 10120110, on left bank 3,000 ft (914 m) upstream from 12th Street in Rapid City and 3.6 mi (5.8 m) downstream from Canyon Lake Dam.

DRAINAGE AREA.--410 mi² (1,060 km²), approximately.

PERIOD OF RECORD.--June 1903 to November 1906, July 1942 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,230.00 ft (984.504 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 30, 1906, nonrecording gage at site 1 mi (1.6 km) downstream at different datum, and June 10, 1972, to Nov. 1, 1972, nonrecording gage at site 800 ft (244 m) downstream at datum 0.80 ft (0.244 m) higher. July 1942 to June 9, 1972, water-stage recorder at site 300 ft (91 m) downstream at datum 0.80 ft (0.244 m) higher (destroyed by flood).

REMARKS.--Records good except those for winter periods, which are fair. Several small diversions above station to municipal park pools and for irrigation of about 320 acres (130 hm³). Flow regulated by Pactola Reservoir 25.4 mi (40.9 km) upstream since Aug. 22, 1956 (see station 06411000). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--41 years, 61.7 ft³/s (1.747 m³/s), 44,700 acre-ft/yr (55.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s (1,420 m³/s) June 9, 1972, gage height, 19.66 ft (5.992 m), from floodmarks, on basis of slope-area measurement of peak flow; minimum, 1.6 ft³/s (0.045 m³/s) Apr. 20, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 12, 13, 1920, reached a stage of 14.4 ft (4.39 m) present datum, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 265 ft³/s (7.5 m³/s) June 15, gage height, 4.81 ft (1.466 m); minimum daily discharge, 15 ft³/s (0.42 m³/s) June 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN.	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	37	29	41	28	29	40	54	111	53	70	54
2	38	42	30	44	28	32	40	55	105	49	72	53
3	33	44	31	42	32	31	42	55	73	56	79	52
4	34	43	32	41	29	29	36	48	54	53	78	43
5	33	42	33	42	32	28	36	57	57	52	89	38
6	34	42	34	41	32	28	36	60	72	44	93	33
7	31	42	35	40	29	28	37	66	62	35	91	25
8	30	43	36	39	27	32	36	72	58	46	94	26
9	31	43	37	38	24	28	35	87	49	46	125	31
10	32	43	39	39	28	27	41	100	43	72	120	33
11	31	45	32	40	28	28	48	93	40	72	110	28
12	32	46	28	41	28	27	38	96	35	99	80	31
13	35	43	32	50	28	26	37	76	43	109	75	38
14	34	41	38	46	28	27	34	72	84	91	75	36
15	29	41	40	43	28	28	35	70	86	107	107	37
16	31	41	40	41	30	28	37	70	60	96	72	43
17	33	42	44	41	32	26	34	66	41	67	61	37
18	36	43	48	38	32	23	42	64	37	68	53	36
19	35	42	43	37	30	24	53	61	38	75	50	36
20	34	41	42	34	28	25	52	72	43	89	55	36
21	35	41	38	35	31	27	48	67	46	84	50	32
22	35	34	37	37	29	31	78	66	41	72	43	30
23	34	30	40	37	29	30	86	76	36	68	38	31
24	34	30	36	35	26	30	89	107	24	70	31	36
25	35	30	42	32	28	31	89	113	16	87	32	34
26	35	30	40	32	30	31	67	105	15	98	34	29
27	35	25	34	30	30	31	62	100	22	84	35	28
28	35	26	32	28	28	37	60	100	57	70	29	27
29	42	27	32	28	27	33	57	107	66	66	24	24
30	38	28	35	28	---	33	55	111	54	70	42	24
31	36	---	35	28	---	34	---	121	---	64	53	---
TOTAL	1075	1147	1124	1168	839	902	1480	2467	1568	2214	2060	1041
MEAN	34.7	38.2	36.3	37.7	28.9	29.1	49.3	79.6	52.3	71.4	66.5	34.7
MAX	55	46	48	50	32	37	89	121	111	109	125	54
MIN	29	25	28	28	24	23	34	48	15	35	24	24
AC-FT	2130	2280	2230	2320	1660	1790	2940	4890	3110	4390	4090	2060

CAL YR 1979 TOTAL 18671 MEAN 51.2 MAX 211 MIN 25 AC-FT 37030
WTR YR 1980 TOTAL 17085 MEAN 46.7 MAX 125 MIN 15 AC-FT 33890

06414700 RAPID CREEK AT EAST MAIN STREET, AT RAPID CITY, SD

LOCATION.--Lat 44°04'45", long 103°12'12", in SE¼NE¼NW¼ sec.6, T.1 N., R.8 E., Pennington County, Hydrologic Unit 10120110, at left downstream corner of bridge on East Main Street.

DRAINAGE AREA.--424 mi² (1,098 km²).

PERIOD OF RECORD.--May 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,169.50 ft (966.064 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several small diversions above station to municipal park pools and for irrigation of about 320 acres (130 hm²). Flow regulated by Pactola Reservoir 27.4 mi (44.1 km) upstream since Aug. 22, 1956 (see station 06411000).

EXTREMES FOR CURRENT PERIOD.--May 1980 to September 1980: Maximum discharge during period, 630 ft³/s (17.8 m³/s) June 15, gage height, 9.70 ft (2.957 m); minimum daily during period, 16 ft³/s (0.45 m³/s) June 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								---	108	49	67	51
2								---	96	49	69	51
3								---	69	57	77	50
4								---	56	52	74	44
5								---	52	52	86	38
6								---	64	49	89	35
7								---	62	43	84	28
8								---	58	48	83	30
9								---	46	49	115	32
10								---	42	69	110	33
11								---	40	72	107	30
12								---	36	113	74	30
13								---	40	114	61	36
14								---	79	107	69	36
15								---	105	109	107	35
16								---	68	104	68	43
17								---	38	72	56	34
18								---	38	69	50	32
19								---	37	79	48	32
20								---	35	96	56	29
21								---	43	88	50	28
22								---	38	71	45	27
23								---	32	67	41	26
24								---	25	67	36	27
25								---	18	88	36	27
26								---	16	95	36	27
27								---	22	85	36	23
28								---	52	68	32	22
29								---	56	66	27	20
30								---	51	69	46	19
31								130	---	63	58	---
TOTAL								---	1524	2279	1993	975
MEAN								---	50.8	73.5	64.3	32.5
MAX								---	108	114	115	51
MIN								---	16	43	27	19
AC-FT								---	3020	4520	3950	1930

06416000 RAPID CREEK BELOW HAWTHORNE DITCH, AT RAPID CITY, SD

LOCATION.--Lat 44°04'00", long 103°10'25", in NW¼NW¼NE¼ sec.8, T.1 N., R.8 E., Pennington County, Hydrologic Unit 10120110, 1.5 mi (2.4 km) downstream from diversion to Hawthorne Ditch on East St. Patrick Street.

DRAINAGE AREA.--427 mi² (1,106 km²).

PERIOD OF RECORD.--August 1946 to October 1953 (monthly discharge only published in WSP 1729) May 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,124.18 (952.250 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 27, 1947, at site 700 ft (210 m) downstream at datum 0.25 ft (0.076 m) lower, and Nov. 28, 1947, to October 1953, at present site, at different datum.

REMARKS.--Records good. Diversions above station for irrigation of about 3,000 acres (12 km²). Flow regulated by Deerfield Dam on Castle Creek since December 1945 (see station 06409500) and by Pactola Reservoir 30 mi (48 km) upstream since August 1956 (see station 06411000).

AVERAGE DISCHARGE.--7 years (1946-53), 62.3 ft³/s (1.764 m³/s).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1972 reached a stage of 17.1 ft (5.21 m) present datum.

EXTREMES FOR CURRENT PERIOD.--May 1980 to September 1980: Maximum discharge during period, 645 ft³/s (18.3 m³/s) June 15, gage height, 13.25 ft (4.039 m); minimum daily discharge, 14 ft³/s (0.40 m³/s) June 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								---	90	35	56	40
2								---	82	33	58	37
3								---	56	40	63	36
4								---	45	34	61	30
5								---	44	34	71	26
6								---	59	31	75	24
7								---	52	25	73	18
8								---	50	32	70	22
9								---	43	32	100	21
10								---	40	48	93	25
11								---	39	49	86	27
12								---	37	68	59	28
13								---	41	71	47	34
14								---	75	67	53	32
15								---	115	75	91	32
16								57	79	72	59	40
17								58	44	48	48	32
18								58	42	51	43	30
19								59	39	59	40	29
20								64	39	72	47	26
21								55	43	68	42	24
22								53	37	58	37	25
23								58	32	57	34	24
24								77	24	56	29	25
25								60	17	73	27	24
26								75	15	78	26	20
27								82	14	70	27	19
28								72	36	57	24	18
29								75	42	55	19	16
30								82	36	56	34	15
31								107	---	53	48	---
TOTAL								---	1407	1657	1640	799
MEAN								---	46.9	53.5	52.9	26.6
MAX								---	115	78	100	40
MIN								---	14	25	19	15
AC-FT								---	2790	3290	3250	1580

06416300 MEADE STREET DRAIN AT RAPID CITY, SD

LOCATION.--Lat 44°03'51", long 103°11'32", in SE¼NE¼NE¼ sec.7, T.1 N., R.8 E., Pennington County, Hydrologic Unit 10120110, on right bank 2,600 ft (792 m) above mouth, and 0.2 mi (0.3 km) from intersection of East St. Patrick Street and highway 79 south.

DRAINAGE AREA.--3.15 mi² (8.2 km²).

PERIOD OF RECORD.--May 1980 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,160 ft (963 m), from topographic map.

REMARKS.--Records good. Information on data collected for period July 1973 through June 1977 can be found in publication Project No. B-034-S.Dak., South Dakota School of Mines and Technology.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 17, 1972, reached a peak of 17 ft (5.2 m) present site and datum, from information furnished by local resident.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge during period, 380 ft³/s (10.8 m³/s) June 15, gage height, 9.85 ft (3.002 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								---	.30	.10	.02	.40
2								---	.15	1.2	.02	.30
3								---	.12	.04	.02	.26
4								---	.12	.30	.01	.16
5								---	.12	.04	.02	.18
6								---	1.4	.02	.00	.15
7								---	.30	.01	.00	.12
8								---	.22	.02	.00	.11
9								---	.25	.02	4.7	.09
10								---	.25	.04	.12	.09
11								---	.25	.04	.02	.10
12								---	.25	4.6	.00	.07
13								---	.25	.18	.00	.06
14								---	11	.05	.30	.04
15								---	27	.12	11	.27
16								---	12	.28	.42	1.3
17								---	.85	.30	.04	.05
18								---	2.0	.28	.15	.02
19								---	.85	.28	.20	.16
20								---	.46	2.5	1.0	.00
21								---	3.3	.15	.15	.15
22								---	.66	.10	.06	.02
23								---	.58	.08	.03	.25
24								---	.25	.15	.04	.03
25								---	.22	2.0	.01	.01
26								---	.22	.04	.00	.01
27								---	.10	.04	.03	.00
28								---	.08	.05	.07	.00
29								---	.10	.08	.05	.00
30								.05	.12	.12	3.4	.01
31								6.1	---	.10	2.3	---
TOTAL								---	63.77	13.33	24.18	4.41
MEAN								---	2.13	.43	.78	.15
MAX								---	27	4.6	11	1.3
MIN								---	.08	.01	.00	.00
AC-FT								---	126	26	48	8.7

06421500 RAPID CREEK NEAR FARMINGDALE, SD

LOCATION.--Lat 43°56'31", long 102°51'12", in SW¼SW¼SW¼ sec.19, T.1 S., R.11 E., Pennington County, Hydrologic Unit 10120110, on right bank at downstream side of bridge, 2 mi (3 km) southeast of Farmingdale and 4.8 mi (7.7 km) downstream from Antelope Creek.

DRAINAGE AREA.--602 mi^2 (1,559 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1946 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,700 ft (823 m), from topographic map. Prior to Sept. 19, 1947, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Pactola Reservoir 67 mi (108 km) upstream since August 22, 1956 (see station 06411000). Diversions for irrigation of about 10,000 acres (4,050 hm^2) above station.

AVERAGE DISCHARGE.--34 years, 54.9 ft^3/s (1.555 m^3/s), 39,780 acre-ft/yr (49.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,320 ft^3/s (207 m^3/s) June 10, 1972, gage height, 11.85 ft (3.612 m), from floodmarks, from rating curve extended above 400 ft^3/s (11.3 m^3/s) on basis of contracted-opening and flow-over-road measurement of peak flow; no flow at times in 1949, 1952-56, 1958-63, 1969-71.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 937 ft^3/s (26.5 m^3/s) June 16, gage height, 8.73 ft (2.661 m); minimum daily discharge, 9.0 ft^3/s (0.25 m^3/s) Aug. 2, 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	41	40	44	40	45	42	31	46	22	11	41
2	16	41	40	44	40	40	52	23	44	23	9.0	45
3	19	44	40	44	40	40	48	22	38	25	9.3	42
4	16	45	42	44	44	40	51	23	29	21	9.0	38
5	15	46	44	44	44	40	45	19	20	18	15	37
6	13	46	44	44	44	45	43	19	16	18	20	33
7	13	46	40	40	44	50	43	23	16	12	22	31
8	13	48	40	42	44	60	42	22	20	11	22	27
9	14	47	40	44	44	70	42	24	18	24	24	23
10	16	48	40	45	44	80	42	31	16	13	58	19
11	17	49	36	45	42	90	49	52	13	11	55	20
12	16	50	33	45	42	90	67	40	11	11	54	23
13	17	52	33	48	40	90	48	45	14	24	36	25
14	17	52	35	48	40	85	42	34	44	42	30	27
15	19	51	33	50	38	83	44	26	280	41	34	27
16	18	50	32	50	36	68	44	24	533	37	77	26
17	19	49	33	50	38	71	52	29	158	36	59	32
18	19	50	35	46	40	60	46	23	79	24	42	27
19	23	50	37	46	45	52	43	26	64	14	35	25
20	26	51	38	46	50	44	50	23	60	12	29	25
21	26	51	39	46	50	36	50	22	53	35	41	24
22	28	50	40	50	50	34	51	20	54	38	39	25
23	29	53	40	50	50	34	63	11	49	32	35	26
24	28	62	40	50	50	33	78	10	41	27	31	25
25	30	57	40	50	50	34	69	13	32	19	26	24
26	33	57	40	45	55	34	73	16	22	19	25	21
27	38	57	42	40	55	36	61	13	16	35	19	19
28	36	59	42	35	50	35	54	16	18	31	27	18
29	38	50	42	35	50	48	42	15	19	25	26	17
30	49	45	42	35	---	42	41	10	28	18	22	16
31	46	---	42	38	---	41	---	15	---	14	29	---
TOTAL	722	1497	1204	1383	1299	1650	1517	720	1851	732	970.3	808
MEAN	23.3	49.9	38.8	44.6	44.8	53.2	50.6	23.2	61.7	23.6	31.3	26.9
MAX	49	62	44	50	55	90	78	52	533	42	77	45
MIN	13	41	32	35	36	33	41	10	11	11	9.0	16
AC-FT	1430	2970	2390	2740	2580	3270	3010	1430	3670	1450	1920	1600

CAL YR 1979 TOTAL 15956.8 MEAN 43.7 MAX 241 MIN 6.1 AC-FT 31650
WTR YR 1980 TOTAL 14353.3 MEAN 39.2 MAX 533 MIN 9.0 AC-FT 28470

06421500 RAPID CREEK NEAR FARMINGDALE, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1953, 1956-58, 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1955 to September 1958, October 1968 to current year.
WATER TEMPERATURES: October 1955 to September 1958, October 1968 to September 1969, October 1971 to September 1975, October 1978 to September 1979.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,650 micromhos Oct. 16, 1956; minimum daily, 360 micromhos June 6, 1978.
WATER TEMPERATURES: Maximum daily, 34.0°C June 12, 1956; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,360 micromhos Oct. 12-14; minimum daily, 355 micromhos Jan. 18.
WATER TEMPERATURES: Maximum daily, 27.5°C July 18; minimum daily, 0.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT										
04...	0845	17	1180	8.3	9.0	470	240	110	47	69
NOV										
16...	1230	50	1050	8.4	3.0	380	180	90	37	44
DEC										
12...	1400	33	967	7.8	.0	400	160	97	39	36
JAN										
16...	1140	50	860	8.3	.0	280	110	68	27	23
MAR										
20...	1015	48	865	7.2	1.0	360	180	85	35	35
APR										
17...	1120	52	1020	8.9	12.0	420	230	100	42	49
MAY										
14...	1330	34	957	8.3	16.0	360	170	85	36	48
JUN										
06...	1340	15	959	8.3	20.5	380	170	86	39	41
JUL										
16...	1040	42	732	8.4	21.5	340	160	77	36	36
AUG										
07...	1445	18	1140	8.8	24.0	420	260	91	48	67
SEP										
03...	1530	42	1015	8.7	20.0	400	190	93	40	60

06421500 RAPID CREEK NEAR FARMINGDALE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT									
04...	34	1.4	8.8	78	230	310	61	.7	7.4
NOV									
16...	29	1.0	6.4	50	200	220	36	.5	6.1
DEC									
12...	24	.8	5.7	42	220	200	21	.4	6.5
JAN									
16...	15	.6	4.4	27	170	150	14	.4	8.1
MAR									
20...	17	.8	4.8	--	180	200	23	.4	2.0
APR									
17...	20	1.0	6.7	--	190	280	45	.6	.7
MAY									
14...	22	1.1	6.6	--	190	240	28	.5	9.5
JUN									
06...	19	.9	6.5	--	210	230	13	.4	11
JUL									
16...	18	.9	6.8	--	180	190	18	.8	7.7
AUG									
07...	25	1.4	8.1	--	160	320	53	.7	.6
SEP									
03...	24	1.3	7.4	--	210	260	54	.6	6.2

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1260	1010	1010	900	1070	881	896	787	985	1170	1110	1100
2	1220	880	1010	860	970	910	977	863	808	1220	1130	1120
3	1220	920	1000	880	950	902	960	888	720	1120	1140	1160
4	1180	930	893	970	960	883	1030	979	784	1210	1140	970
5	1200	910	815	890	880	920	1040	981	845	1190	1170	882
6	1220	860	837	975	890	900	1040	1060	887	1170	---	962
7	1160	840	795	980	890	906	1020	1130	970	1170	1080	962
8	1160	870	870	1120	870	970	974	1120	1020	1070	1000	960
9	1200	860	862	1470	850	890	1090	---	1050	1070	960	970
10	1320	880	909	1080	1020	890	1080	---	1080	1240	955	1060
11	1270	900	884	1110	1030	932	873	---	1080	1270	848	1070
12	1360	890	862	800	1010	897	870	---	1080	1320	800	1100
13	1360	890	890	800	990	863	867	---	1120	1330	797	1110
14	1360	860	935	800	960	896	871	---	1190	1270	815	1130
15	1320	860	942	710	930	900	867	---	540	1090	967	1120
16	1320	850	991	680	930	903	972	---	555	789	957	1110
17	1300	910	1050	720	950	898	971	934	700	850	882	1060
18	1290	900	1000	355	960	851	960	944	944	879	768	964
19	1290	900	958	790	980	812	953	1010	1060	880	800	962
20	1310	860	930	800	880	973	1000	991	1070	878	887	995
21	1310	810	853	800	790	880	1000	1100	1090	1040	958	987
22	1310	900	850	800	960	930	897	1070	1050	1110	947	980
23	1150	900	844	800	820	922	854	1070	1070	1100	949	1020
24	1160	890	887	810	810	896	813	1170	1010	948	1010	1010
25	1060	890	784	760	970	863	750	1160	1010	1000	990	1020
26	1060	880	788	950	880	864	760	1330	975	993	980	1040
27	1050	920	793	960	820	839	768	1220	955	1080	984	1040
28	1020	990	837	960	840	885	777	1180	1050	1020	1070	1130
29	1000	1010	951	1080	840	940	903	1220	1050	979	1060	1120
30	1010	1020	951	1030	---	843	860	1050	1100	965	1080	1120
31	920	---	957	1060	---	840	---	1040	---	974	---	---
MEAN	1210	900	901	894	921	893	923	1060	962	1080	974	1040

06421500 RAPID CREEK NEAR FARMINGDALE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT									
04...	760	1.03	34.9	1.7	.770	.710	.63	1.9	--
NOV									
16...	566	.77	76.4	1.3	1.400	1.100	1.0	3.1	--
DEC									
12...	545	.74	48.6	1.5	.760	.690	.64	2.0	--
JAN									
16...	403	.55	54.4	1.2	.800	.820	.74	2.3	--
MAR									
20...	499	.68	64.7	1.2	.860	.880	.82	2.5	--
APR									
17...	647	.88	90.8	2.0	.900	.860	.77	2.4	--
MAY									
14...	575	.78	52.8	1.7	.640	.370	.29	.89	--
JUN									
06...	557	.76	22.6	.92	.530	.310	.19	.58	--
JUL									
16...	484	.66	54.9	.72	.610	.370	.31	.95	--
AUG									
07...	685	.93	33.3	.00	.400	.170	.14	.43	--
SEP									
03...	657	.89	74.5	2.0	.880	.670	.67	2.1	--

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.5	4.0	.0	5.0	.0	.0	5.5	15.5	18.0	25.5	22.0	19.5
2	12.0	1.5	.0	5.0	1.5	.0	5.0	15.0	21.0	22.5	29.5	17.5
3	10.0	2.5	.0	.0	1.0	.0	5.0	16.0	23.0	23.5	23.5	20.5
4	12.5	3.5	.0	.0	1.0	.0	7.5	16.5	27.5	23.5	22.0	15.5
5	11.0	4.0	.0	.0	1.5	.0	9.0	16.5	27.0	24.0	17.5	21.5
6	14.0	1.0	.0	.0	1.0	.0	9.5	16.0	20.0	23.5	---	22.0
7	12.5	1.5	.0	.0	.0	.0	10.0	16.0	18.0	23.5	24.0	22.5
8	11.0	1.0	1.0	.0	.5	.0	7.0	18.0	19.0	23.0	22.5	20.0
9	8.5	.0	1.5	.0	1.5	.0	2.5	14.5	24.5	24.5	20.0	19.0
10	9.5	3.5	2.0	.5	1.5	.0	8.5	13.5	25.0	29.0	22.5	19.5
11	11.5	2.0	.0	.0	1.0	.5	6.5	13.0	22.5	22.5	23.0	22.0
12	8.5	2.5	.0	1.0	1.0	1.0	7.0	12.0	23.0	21.0	22.5	20.0
13	12.0	.5	.0	1.0	.5	1.0	7.5	12.0	27.5	27.0	21.0	16.5
14	9.0	3.5	.0	.5	.5	1.0	8.0	13.0	22.5	26.0	20.5	17.5
15	10.5	.5	.0	1.0	.0	1.0	10.0	13.0	18.5	25.5	21.0	17.0
16	12.5	1.0	.0	.5	.0	.0	10.0	17.0	17.0	27.0	19.0	17.0
17	12.5	2.5	.5	.5	.5	.0	10.0	14.5	19.0	25.0	22.5	13.5
18	12.0	2.0	.0	1.0	1.0	1.0	11.0	15.0	23.0	27.5	25.0	15.5
19	10.5	2.0	.0	.5	1.5	.5	15.0	15.5	22.0	24.0	25.0	14.0
20	12.5	2.5	.0	.5	1.0	.5	17.0	16.5	22.5	22.5	21.0	17.0
21	10.5	.0	.0	.5	1.0	1.0	19.0	18.5	23.0	25.5	21.5	16.0
22	6.5	.0	.0	.0	1.5	1.5	17.5	20.0	26.5	24.0	23.5	16.0
23	10.5	.0	.5	.0	1.0	2.5	14.5	21.5	23.5	23.5	21.5	14.5
24	11.0	.0	.5	.0	.5	2.5	14.0	17.5	27.0	23.5	25.5	14.0
25	11.0	.5	.5	.0	.0	3.5	16.5	19.0	29.0	22.0	24.0	15.0
26	11.5	.0	1.0	.0	1.0	3.5	14.5	18.0	25.0	20.0	18.0	10.0
27	17.5	.0	.5	.0	.5	3.0	13.0	19.5	27.5	23.5	18.5	11.5
28	10.5	.0	.0	.0	.0	1.5	12.5	22.0	28.0	23.0	25.0	15.5
29	5.5	.0	.0	.0	.0	.0	14.0	22.0	26.0	20.0	23.0	14.5
30	5.0	.0	.0	.0	---	5.0	14.0	18.5	28.0	26.5	19.0	18.0
31	3.5	---	.0	.0	---	8.0	---	16.0	---	22.5	---	---
MEAN	10.5	1.5	.5	.5	1.0	1.0	10.5	16.5	23.5	24.0	22.0	17.0

06422398 BOXELDER CREEK AT NEMO, SD

LOCATION.--Lat 44°11'48", long 103°30'14", in NE¼NW¼ sec.27, T.3 N., R.5 E., Lawrence County, Hydrologic Unit 10120111, at center span on downstream side of county highway bridge at Nemo and 2.5 mi (4.0 km) downstream from South Boxelder Creek.

PERIOD OF RECORD.--May 1978 to current year (no winter record).

GAGE.--Water-stage recorder. Altitude of gage is 4,610 ft (1,410 m), from topographic map.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 519 ft³/s (14.7 m³/s) May 11, 1978, gage height, 61.80 ft (18.837 m); minimum daily discharge, 1.3 ft³/s (0.15 m³/s) Sept. 8-10, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 36 ft³/s (1.02 m³/s) June 15, gage height, 60.51 ft (18.443 m); minimum daily discharge, 1.3 ft³/s (0.04 m³/s) Sept. 8-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2		---		---	---		5.0	15	5.3	.62	5.0
2	3.2		---		---	---		5.0	15	6.1	.50	4.5
3	3.2		---		---	---		6.8	8.1	5.8	.50	3.5
4	3.0		---		---	---		9.3	5.3	5.1	.50	2.6
5	3.0		---		---	---		6.5	3.6	4.5	.38	2.1
6	2.6		---		---	---		5.0	5.3	4.3	.38	1.8
7	2.3		---		---	---		4.0	6.7	3.4	.38	1.5
8	2.2		---		---	---		6.2	5.3	2.8	.38	1.3
9	2.8		---		---	---		17	4.8	2.7	.38	1.3
10	2.9		2.0		---	---		16	3.8	2.3	2.0	1.3
11	2.7		---		---	---		14	2.8	1.9	1.4	1.4
12	2.8		---		---	---		15	2.4	1.7	.86	1.7
13	3.0		---		---	---		11	2.2	2.2	.38	2.1
14	3.0		---		---	---		11	8.1	2.3	2.5	2.3
15	2.8		---		---	---		11	28	2.0	4.2	2.0
16	2.7		---		---	---		9.0	26	2.0	5.2	2.3
17	2.8		---		---	---		7.4	22	1.7	4.0	2.4
18	3.0		---		---	---		6.7	13	1.4	2.8	2.3
19	3.0		---		---	---		5.2	13	1.4	1.8	2.0
20	2.7		---		2.2	---		5.1	11	1.4	6.5	1.8
21	2.8		---		---	---		4.2	11	1.8	7.8	1.7
22	2.8		---		---	---		3.0	11	1.6	5.5	1.6
23	2.8		---		---	---		3.0	11	1.3	4.2	1.8
24	2.5		---		---	4.3		3.6	8.7	.86	3.2	1.8
25	2.3		---		---	---		2.5	6.7	1.3	2.1	2.2
26	2.3		---		---	---		2.1	6.1	4.2	1.8	2.5
27	2.1		---		---	---		1.3	5.0	4.2	1.8	2.5
28	2.0		---		---	---		1.3	4.3	2.3	1.6	2.2
29	2.3		---		---	---		1.4	4.2	1.3	.98	1.9
30	2.6		---		---	---		4.3	4.2	.86	3.2	1.8
31	2.3		---		---	---		7.5	---	.74	5.0	---
TOTAL	83.7		---		---	---		210.4	273.6	80.76	72.84	65.2
MEAN	2.70		---		---	---		6.79	9.12	2.61	2.35	2.17
MAX	3.2		---		---	---		17	28	6.1	7.8	5.0
MIN	2.0		---		---	---		1.3	2.2	.74	.38	1.3
AC-FT	166		---		---	---		417	543	160	144	129

06422500 BOXELDER CREEK NEAR NEMO, SD

LOCATION.--Lat 44°08'38", long 103°27'16", in SE¼SE¼ sec.12, T.2 N., R.5 E., Lawrence County, Hydrologic Unit 10120111, on right bank at ranch 0.2 mi (0.3 km) upstream from county line, 0.9 mi (1.4 km) downstream from Jim Creek and 4.5 mi (7.2 km) southeast of Nemo.

DRAINAGE AREA.--96 mi² (249 km²), approximately.

PERIOD OF RECORD.--July 1945 to July 1947, May 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,320.27 ft (1,316.818 m) National Geodetic Vertical Datum of 1929. July 1945 to July 1947 nonrecording gage at site 100 ft (30 m) upstream at different datum. May 17, 1966, to June 9, 1972, water-stage recorder (destroyed by flood) and June 10, 1972, to Aug. 8, 1972, nonrecording gage, both at site 100 ft (30 m) upstream at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--15 years (water years 1946, 1967-80), 19.9 ft³/s (0.564 m³/s), 14,420 acre-ft/yr (17.8 hm³/yr); median of yearly mean discharges, 19 ft³/s (0.54 m³/s) 3,800 acre-ft/yr (17 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,100 ft³/s (852 m³/s) June 9, 1972, gage height, 20.4 ft (6.22 m), site and datum then in use, 22.0 ft (6.71 m), present site and datum, from floodmarks, from rating curve extended above 600 ft³/s (17.0 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 0.70 ft³/s (0.020 m³/s) Dec. 30, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1911 reached a stage of about 16 ft (4.9 m), present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 35 ft³/s (0.99 m³/s) Mar. 13, gage height, 2.11 ft (0.643 m), no peak above base of 100 ft³/s (2.83 m³/s); maximum gage height, 2.13 ft (0.649 m) Feb. 29 (backwater from ice); minimum daily discharge, 1.6 ft³/s (0.045 m³/s) Aug. 6-8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	3.9	4.0	2.6	2.4	6.2	6.2	11	11	6.2	3.3	4.3
2	3.4	3.8	4.0	2.6	2.5	6.2	5.8	11	13	6.7	3.5	4.4
3	3.4	3.7	4.0	2.4	2.6	5.7	5.6	11	9.2	7.0	2.2	4.2
4	3.4	4.0	4.0	2.4	2.6	7.1	5.6	11	7.2	5.4	1.8	3.7
5	3.4	4.2	4.0	2.4	2.6	5.7	7.2	13	6.7	5.1	1.7	3.2
6	3.4	4.0	3.8	2.2	2.6	5.5	15	12	6.6	5.0	1.6	3.1
7	3.4	3.7	4.0	2.2	2.7	6.0	14	10	6.6	4.8	1.6	2.9
8	3.4	3.7	4.2	2.0	2.5	5.7	10	9.8	6.6	4.2	1.6	2.8
9	3.4	3.7	4.0	1.8	2.4	5.7	9.8	9.5	6.2	3.5	1.9	2.8
10	3.8	3.9	3.9	2.0	2.6	6.0	10	17	5.9	3.4	3.2	2.6
11	3.7	4.1	3.8	2.2	2.8	12	10	20	5.3	3.2	2.7	2.6
12	3.7	4.0	3.7	2.2	2.7	9.5	9.0	17	5.2	3.3	2.5	2.6
13	3.7	3.9	3.6	2.2	2.8	13	9.0	17	4.6	4.0	2.5	2.6
14	3.8	3.8	3.5	2.2	2.7	9.8	11	15	7.3	3.8	2.5	2.8
15	3.8	3.9	3.4	2.2	2.3	8.1	22	14	13	3.2	3.5	2.9
16	3.9	3.6	3.3	2.1	2.3	9.0	25	13	13	2.6	4.2	2.9
17	4.1	3.6	3.3	2.0	2.4	16	22	12	11	2.5	4.0	2.9
18	4.0	4.0	3.5	2.1	2.5	8.7	19	10	8.2	2.4	3.5	2.9
19	4.0	3.8	3.5	2.2	3.0	6.8	19	9.8	7.5	2.3	3.2	2.8
20	4.0	3.8	3.4	2.5	3.5	7.6	18	9.4	6.9	2.3	4.6	2.7
21	4.0	3.5	3.3	2.7	5.0	7.8	17	8.8	8.1	2.2	5.6	2.6
22	4.0	3.9	3.1	2.4	5.2	6.4	16	8.0	7.4	2.0	4.9	2.6
23	4.2	3.9	3.1	2.8	5.3	7.9	15	7.5	6.9	1.9	4.2	2.6
24	4.2	3.8	3.0	2.6	5.0	6.6	13	7.4	6.4	1.9	3.7	2.6
25	4.2	4.2	3.0	2.4	5.1	6.2	12	7.2	6.0	2.0	3.3	2.7
26	4.2	4.4	3.0	2.4	4.2	5.8	12	6.6	6.0	2.5	2.9	2.6
27	4.0	3.8	3.0	2.3	4.7	6.8	12	6.4	5.8	2.8	2.9	2.6
28	3.9	4.4	2.8	2.2	6.6	6.2	11	5.8	5.5	2.6	2.9	2.6
29	3.9	4.5	2.8	2.1	6.2	6.0	11	5.9	5.5	2.6	2.9	2.5
30	4.0	4.0	2.6	2.1	---	6.2	11	6.7	5.6	2.7	3.1	2.4
31	4.0	---	2.6	2.2	---	6.4	---	9.8	---	3.0	4.2	---
TOTAL	117.7	117.5	107.2	70.7	99.8	232.6	383.2	332.6	224.2	107.1	96.2	87.5
MEAN	3.80	3.92	3.46	2.28	3.44	7.50	12.8	10.7	7.47	3.45	3.10	2.92
MAX	4.2	4.5	4.2	2.8	6.6	16	25	20	13	7.0	5.6	4.4
MIN	3.4	3.5	2.6	1.8	2.3	5.5	5.6	5.8	4.6	1.9	1.6	2.4
AC-FT	233	233	213	140	198	461	760	660	445	212	191	174

CAL YR 1979 TOTAL 2570.5 MEAN 7.04 MAX 39 MIN 2.6 AC-FT 5100
WTR YR 1980 TOTAL 1976.3 MEAN 5.40 MAX 25 MIN 1.6 AC-FT 3920

06422600 BOXELDER CREEK AT CAMP COLUMBUS, NEAR NEMO, SD

LOCATION.--Lat 44°07'30", long 103°25'30", in SE¼NW¼ sec.17, T.2 N., R.6 E., Pennington County, Hydrologic Unit 10120110, at center span on downstream side of county highway bridge, 0.2 mi (0.3 km) southeast of Camp Columbus, 3.4 mi (5.5 km) downstream from Jim Creek and 6.0 mi (9.7 km) southeast of Nemo.

PERIOD OF RECORD.--June 1978 to current year (no winter record).

GAGE.--Water-stage recorder. Altitude of gage is 4,220 ft (1,290 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 257 ft³/s (7.28 m³/s) May 18, 1978, gage height, 51.78 ft (15.783 m) from high water mark.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92 ft³/s (2.61 m³/s) Aug. 27, gage height, 50.99 ft (15.542 m); minimum daily discharge, 0.77 ft³/s (0.022 m³/s) Aug. 8, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20 ft³/s (0.57 m³/s) June 15, gage height, 50.32 ft (15.338 m); minimum daily discharge, 0.77 ft³/s (0.022 m³/s) Aug. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1		---		---	---		10	11	6.4	1.7	4.7
2	3.2		---		---	---		10	14	7.0	1.5	4.6
3	3.2		---		---	---		10	11	7.5	1.3	4.0
4	3.3		---		---	---		10	8.4	6.4	1.1	3.7
5	3.2		---		---	---		11	7.6	5.7	.98	3.3
6	3.2		---		---	---		10	7.8	5.4	.91	3.0
7	3.1		---		---	---		9.2	7.9	5.0	.84	2.7
8	3.1		---		---	---		9.1	7.7	4.6	.77	2.5
9	3.3		---		---	---		9.0	6.9	4.0	.84	2.4
10	3.7		---		---	---		9.6	6.4	3.6	3.3	2.3
11	3.4		---		---	---		18	6.0	3.4	2.5	2.3
12	3.6		---		---	---		16	5.7	3.5	2.1	2.2
13	3.7		3.4		---	---		15	5.3	4.5	1.9	2.3
14	3.8		---		---	---		14	7.1	4.2	1.8	2.3
15	3.7		---		---	---		13	16	3.6	3.6	2.3
16	3.9		---		---	---		12	16	3.0	4.4	2.6
17	4.1		---		---	---		11	14	2.5	3.8	2.6
18	4.1		---		---	---		10	10	2.3	3.2	2.5
19	4.2		---		---	---		9.5	8.0	2.2	2.7	2.5
20	4.1		---		3.0	---		9.0	7.4	2.4	4.5	2.3
21	4.1		---		---	---		8.1	8.2	2.4	5.6	2.2
22	4.2		---		---	---		7.6	7.8	2.4	4.5	2.1
23	4.3		---		---	---		7.3	7.4	2.3	3.9	2.1
24	4.3		---		---	5.3		7.2	6.8	2.2	3.4	2.1
25	4.1		---		---	---		7.2	6.2	2.2	2.9	2.1
26	4.0		---		---	---		6.5	6.2	2.5	2.7	2.0
27	3.9		---		---	---		6.2	6.0	2.8	2.6	2.0
28	3.9		---		---	---		5.5	5.8	2.7	2.6	2.0
29	4.2		---		---	---		5.9	5.8	2.3	2.5	2.0
30	4.6		---		---	---		6.3	6.0	2.1	2.8	1.9
31	4.4		---		---	---		11	---	1.9	4.3	---
TOTAL	117.0		---		---	---		304.2	250.4	113.0	81.54	77.6
MEAN	3.77		---		---	---		9.81	8.35	3.65	2.63	2.59
MAX	4.6		---		---	---		18	16	7.5	5.6	4.7
MIN	3.1		---		---	---		5.5	5.3	1.9	.77	1.9
AC-FT	232		---		---	---		603	497	224	162	154

CHEYENNE RIVER BASIN

06422650 BOXELDER CREEK AT DOTY SCHOOL, NEAR BLACKHAWK, SD

LOCATION.--Lat 44°07'03", long 103°21'54", in NE¼SW¼ sec.23, T.2 N., R.6 E., Pennington County, Hydrologic Unit 10120111, on left bank 100 ft (30 m) upstream from county highway bridge, 0.3 mi (0.5 km) northwest of Doty School and 2.0 mi (3.2 km) southwest of Blackhawk.

PERIOD OF RECORD.--May 1978 to September 1980 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 3,860 ft (1,180 m), from topographic map.

REMARKS.--Records good. Considerable loss in sinkholes above gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 251 ft^3/s (7.11 m^3/s) May 18, 1978, gage height, 42.34 ft (12.095 m); no flow for many days.

EXTREMES FOR CURRENT YEAR.--No flow during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

No flow during year

CHEYENNE RIVER BASIN

06423010 BOXELDER CREEK NEAR RAPID CITY, SD

LOCATION.--Lat 44°07'54", long 103"17'54", in NW¼SE¼ sec.17, T.2 N., R.7 E., Pennington County, Hydrologic Unit 10120111, near center span on downstream side of bridge on State Highway 79, and 4.0 mi (6.4 km) northwest of Rapid City.

PERIOD OF RECORD.--May 1978 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,450 ft (1,050 m), from topographic map.

REMARKS.--Records fair. Considerable loss in sinkholes in reach above gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 253 ft^3/s (7.16 m^3/s) May 18, 1978, gage height, 31.14 ft (9.491 m), from floodmark; no flow for many days.

EXTREMES FOR CURRENT YEAR.--No flow during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

No flow during year

06423500 CHEYENNE RIVER NEAR WASTA, SD

LOCATION.--Lat 44°04'52", long 102°24'03", in NE¼NE¼NW¼ sec.2, T.1 N., R.14 E., Pennington County, Hydrologic Unit 10120111, on left bank at downstream side of highway bridge, 200 ft (61 m) downstream from Chicago and North Western Transportation Co. bridge, 3.0 mi (4.8 m) east of Wasta, and 8.6 mi (13.8 m) downstream from Boxelder Creek.

DRAINAGE AREA.--12,800 mi² (33,200 km²), approximately.

PERIOD OF RECORD.--July 1914 to June 1915, August 1928 to June 1932, March 1934 to current year. Monthly discharge only for some periods, published in WSP 1309. Records for Feb. 19-28, 1930, published in WSP 701, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 786: Drainage area. WSP 1279: 1930(M), 1931, 1937. See also Period of Record.

GAGE.--Water-stage recorder. Datum of gage is 2,260.78 ft (689.086 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 1, 1940, nonrecording gage at site 50 ft (15 m) upstream; Aug. 1, 1940, to Dec. 3, 1940, nonrecording gage and Dec. 4, 1940, to Sept. 30, 1968, water-stage recorder at present site all at datum 2.00 ft (0.610 m) higher. Oct. 1, 1968, to Sept. 30, 1972, at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Angostura Reservoir 108 mi (174 km) upstream (see station 06401000) since October 1949 and by upstream reservoirs on Rapid Creek since August 1956. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--49 years (water years 1929-31, 1935-80), 351 ft³/s (9.94 m³/s), 254,300 acre-ft/yr (314 hm³/yr); median of yearly mean discharges, 290 ft³/s (8.21 m³/s), 210,000 acre-ft/yr (259 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 46,300 ft³/s (1,310 m³/s) May 6, 1932, gage height, 13.28 ft (4.048 m), present datum, from rating curve extended above 11,000 ft³/s (312 m³/s) on basis of an incomplete discharge measurement at gage height 10.65 ft (3.246 m), present datum; maximum gage height observed, 14.5 ft (4.42 m), present datum, June 13, 1915; minimum discharge, 0.6 ft³/s (0.017 m³/s) July 27, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1920 reached a stage of 18 ft (5.5 m), present datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,180 ft³/s (147 m³/s) Aug. 16, gage height, 6.21 ft (1.893 m); minimum daily, 16 ft³/s (0.45 m³/s) July 13, Aug. 5, 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	161	190	52	23	200	337	124	293	27	31	116
2	77	131	250	50	23	320	400	109	254	36	25	165
3	79	120	290	47	50	400	334	98	174	144	23	130
4	82	119	280	44	110	400	569	92	116	76	20	106
5	80	120	260	40	110	380	357	90	96	39	16	97
6	73	120	250	37	110	370	319	90	77	29	16	85
7	71	121	230	34	105	390	310	84	64	24	21	80
8	74	121	200	30	105	370	297	89	74	22	28	76
9	73	122	180	27	100	290	277	86	80	22	32	70
10	77	122	160	25	95	280	262	88	72	21	355	66
11	81	141	140	23	95	260	284	100	62	25	161	68
12	86	134	120	23	100	250	536	127	64	17	93	71
13	91	126	110	40	110	250	272	277	62	16	79	74
14	95	129	100	75	100	250	213	238	147	17	72	75
15	88	130	94	113	95	260	192	141	202	34	66	81
16	85	127	88	115	86	280	191	106	541	53	1520	88
17	85	126	88	110	92	300	179	94	847	52	289	88
18	88	120	95	50	100	327	182	114	286	45	162	89
19	86	120	107	24	110	365	178	94	541	49	113	89
20	88	130	102	23	110	364	158	85	344	37	102	84
21	100	140	95	24	110	309	149	81	161	97	92	84
22	129	135	90	27	110	273	135	78	124	62	100	80
23	136	130	84	28	100	253	127	72	99	63	93	78
24	112	125	80	26	100	243	128	65	121	54	90	79
25	103	125	75	25	100	196	166	60	87	58	81	79
26	101	125	70	25	100	182	169	56	65	104	74	77
27	103	120	67	25	100	189	168	58	50	79	72	75
28	109	120	64	24	100	203	157	60	37	73	65	73
29	118	120	61	23	100	212	151	53	34	63	64	68
30	965	150	58	23	---	377	134	51	32	51	78	61
31	312	---	55	23	---	308	---	67	---	40	84	---
TOTAL	3928	3830	4133	1255	2749	9051	7331	3027	5206	1529	4117	2552
MEAN	127	128	133	40.5	94.8	292	244	97.6	174	49.3	133	85.1
MAX	965	161	290	115	110	400	569	277	847	144	1520	165
MIN	71	119	55	23	23	182	127	51	32	16	16	61
AC-FT	7790	7600	8200	2490	5450	17950	14540	6000	10330	3030	8170	5060

CAL YR 1979 TOTAL 87300 MEAN 239 MAX 5150 MIN 23 AC-FT 173200
WTR YR 1980 TOTAL 48708 MEAN 133 MAX 1520 MIN 16 AC-FT 96610

06425100 ELK CREEK NEAR RAPID CITY, SD

LOCATION.--Lat 44°14'25", long 103°09'03", in NE¼NE¼ sec.9, T.3 N., R.8 E., Meade County, Hydrologic Unit 10120110, on section line near right upstream corner of county road bridge, 1.7 mi (2.7 km) downstream from Morris Creek tributary and 10 mi (16.1 km) north of Exit 61 and I-90 northeast of Rapid City.

DRAINAGE AREA.--190 mi² (492 km²).

PERIOD OF RECORD.--November 1978 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,950 ft (900 m), from topographic map.

REMARKS.--Records fair except those for winter months, which are poor. Some flow is pumped from stream for irrigation. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 379 ft³/s (10.7 m³/s) June 14, 1980, gage height, 7.12 ft (2.170 m); maximum gage height, 7.28 ft (2.219 m) Aug. 8, 1979; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 379 ft³/s (10.7 m³/s) June 14, gage height, 7.12 ft (2.170 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	1.2	.88	.85	1.6	1.6	.99	5.0	.33	.00	.00
2	.00	.00	1.4	.88	.85	1.7	1.9	.89	2.1	.29	.00	.00
3	.00	.00	1.5	.84	.89	2.0	2.1	.86	2.7	.28	.00	.00
4	.00	.00	1.8	.80	1.4	2.0	2.2	.78	.87	.24	.00	.00
5	.00	.00	2.3	.80	1.8	2.0	2.9	.75	.80	.20	.00	.00
6	.00	.00	1.6	.76	1.9	1.8	2.8	.70	.60	.18	.00	.00
7	.00	.00	1.4	.75	1.9	2.0	2.5	.63	.50	.12	.00	.00
8	.00	.00	1.2	.75	1.6	2.2	2.2	.58	.45	.03	.00	.00
9	.00	.00	1.2	.75	1.6	2.4	1.8	.61	.38	.00	.00	.00
10	.00	.00	1.5	.78	1.7	2.5	1.8	.74	.31	.00	.00	.00
11	.00	.00	1.1	.80	1.6	2.9	1.8	.77	.34	.00	.00	.00
12	.00	.00	.83	.83	1.4	3.2	1.8	.95	.35	.00	.00	.00
13	.00	.13	.76	1.2	1.4	2.9	1.8	1.2	.28	.00	.00	.00
14	.00	.27	.78	1.7	1.7	2.8	1.8	1.2	37	.00	.00	.00
15	.00	.35	.76	2.3	1.6	2.7	1.8	1.1	36	.00	.00	.00
16	.00	.39	.74	1.6	1.8	2.6	1.7	1.1	13	.00	.00	.00
17	.00	.42	.72	1.7	2.0	2.4	1.7	1.0	7.0	.00	.00	.00
18	.00	.83	.89	1.6	2.1	2.2	1.8	.93	3.1	.00	.00	.00
19	.00	.72	.90	1.4	2.2	2.0	1.7	.87	15	.00	.00	.00
20	.00	.63	.86	1.4	2.3	1.9	1.5	.84	2.7	.00	.00	.00
21	.00	.78	.86	1.5	2.3	1.6	1.4	.75	1.4	.00	.00	.00
22	.00	.83	.86	1.5	2.4	1.5	1.2	.54	1.1	.00	.00	.00
23	.00	.72	.86	1.7	2.4	1.4	1.1	.40	.91	.00	.00	.00
24	.00	1.3	.86	1.6	2.3	1.3	.97	.36	1.7	.00	.00	.00
25	.00	1.4	.90	1.2	1.8	1.2	.93	.31	1.7	.00	.00	.00
26	.00	1.3	.94	1.1	2.2	1.1	.98	.22	1.0	.00	.00	.00
27	.00	.72	.94	1.0	2.8	1.1	1.0	.15	.66	.00	.00	.00
28	.00	.30	.90	.95	2.6	1.5	1.0	.14	.41	.00	.00	.00
29	.00	.30	.90	.90	2.3	1.6	1.0	.15	.32	.00	.00	.00
30	.00	.63	.86	.85	---	1.6	1.0	.15	.34	.00	.00	.00
31	.00	---	.84	.85	---	1.6	---	.29	---	.00	.00	---
TOTAL	.00	12.02	33.18	35.67	53.69	61.3	49.78	20.95	140.02	1.67	.00	.00
MEAN	.000	.40	1.07	1.15	1.85	1.98	1.66	.68	4.67	.054	.000	.000
MAX	.00	1.4	2.3	2.3	2.8	3.2	2.9	1.2	38	.33	.00	.00
MIN	.00	.00	.72	.75	.85	1.1	.93	.14	.28	.00	.00	.00
AC-FT	.00	24	66	71	106	122	99	42	278	3.3	.00	.00

CAL YR 1979 TOTAL 1380.03 MEAN 3.78 MAX 72 MIN .00 AC-FT 2740
WTR YR 1980 TOTAL 408.28 MEAN 1.12 MAX 36 MIN .00 AC-FT 810

06425500 ELK CREEK NEAR ELM SPRINGS, SD

'LOCATION.--Lat 44°14'54", long 102°30'10", in SW¼NW¼ sec.1, T.3 N., R.13 E., Meade County, Hydrologic Unit 10120111, on left bank near downstream end of county highway bridge, 1.4 mi (2.3 km) downstream from Hay Draw, 5.0 mi (8.0 km) southeast of Elm Springs, and 7.0 mi (11.3 km) upstream from mouth.

DRAINAGE AREA.--540 mi^2 (1,400 km^2), approximately.

PERIOD OF RECORD.--July 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,304.49 ft (702.409 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 2, 1976, nonrecording gage, and prior to Feb. 1, 1967, at site 350 ft (107 m) downstream at present datum.

REMARKS.--Records fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--31 years, 22.7 ft^3/s (0.643 m^3/s), 16,450 acre-ft/yr (20.3 hm^3/yr); median of yearly mean discharges, 20 ft^3/s (0.57 m^3/s), 14,500 acre-ft/yr (18 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,540 ft^3/s (242 m^3/s) Mar. 29, 1952, gage height, 10.61 ft (3.234 m), from floodmarks, site and datum then in use, from rating curve extended above 5,100 ft^3/s (144 m^3/s); maximum gage height, 11.0 ft (3.35 m) May 29, 1962, from floodmarks, site and datum then in use; no flow for long periods in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 17 ft (5.2 m), at former site, in May 1920, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 437 ft^3/s (12.4 m^3/s) June 15, gage height, 6.83 ft (2.082 m), no other peak above base of 400 ft^3/s (11.3 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.01	.08	.00	.00	.00	.04	.00	2.1	.00	.00	.00
2	.00	.01	.08	.00	.00	.00	.02	.00	.08	.57	.00	.00
3	.00	.01	.09	.00	.00	.00	.04	.00	.00	5.6	.00	.00
4	.00	.02	.10	.00	.00	.00	.03	.00	.00	.95	.00	.00
5	.00	.02	.09	.00	.00	.00	.02	.00	.00	.07	.00	.00
6	.00	.04	.08	.00	.00	.00	.00	.00	3.3	.00	.00	.00
7	.00	.04	.06	.00	.00	.00	.00	.00	1.3	.00	.00	.00
8	.00	.04	.10	.00	.00	.00	.00	.00	.21	.00	.00	.00
9	.00	.03	.16	.00	.00	.00	.00	.00	.06	.00	.00	.00
10	.00	.04	.17	.00	.00	.00	.02	.00	.00	.00	.00	.00
11	.00	.07	.12	.00	.00	.01	.13	.00	.00	.00	.00	.00
12	.00	.09	.10	.00	.00	.01	.04	.00	.00	.00	.00	.00
13	.00	.07	.10	.00	.00	.01	.02	.00	.00	.00	.00	.00
14	.00	.05	.10	.00	.00	.01	.02	.00	.87	.00	.00	.00
15	.00	.05	.06	.00	.00	.01	.01	.00	74	.00	.00	.00
16	.00	.07	.03	.00	.00	.01	.02	.00	61	.00	.00	.00
17	.00	.07	.06	.00	.00	.01	.03	.00	27	.00	.00	.00
18	.00	.09	.06	.00	.00	.01	.02	.00	12	.00	.00	.00
19	.00	.09	.05	.00	.00	.02	.01	.00	7.6	.00	.00	.00
20	.00	.11	.05	.00	.00	.01	.01	.00	3.8	.00	.00	.00
21	.00	.09	.05	.00	.00	.01	.00	.00	2.1	.00	.00	.00
22	.00	.09	.04	.00	.00	.03	.00	.00	1.5	.00	.00	.00
23	.00	.11	.04	.00	.00	.02	.00	.00	.74	.00	.00	.00
24	.00	.07	.04	.00	.00	.01	.00	.00	.23	.00	.00	.00
25	.00	.09	.05	.00	.00	.01	.00	.00	.20	.00	.00	.00
26	.00	.10	.05	.00	.00	.01	.00	.00	.00	.00	.00	.00
27	.00	.11	.04	.00	.00	.01	.00	.00	.00	.00	.00	.00
28	.00	.10	.04	.00	.00	.05	.00	.00	.00	.00	.00	.00
29	.00	.08	.03	.00	.00	.07	.00	.00	.00	.00	.00	.00
30	.06	.08	.02	.00	---	.03	.00	.00	.00	.00	.00	.00
31	.05	---	.00	.00	---	.02	---	.11	---	.00	.00	---
TOTAL	.11	1.94	2.14	.00	.00	.38	.48	.11	198.09	7.19	.00	.00
MEAN	.004	.065	.069	.000	.000	.012	.016	.004	6.60	.23	.000	.000
MAX	.06	.11	.17	.00	.00	.07	.13	.11	74	5.6	.00	.00
MIN	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.2	3.8	4.2	.00	.00	.8	1.0	.2	393	14	.00	.00

CAL YR 1979 TOTAL 1061.43 MEAN 2.91 MAX 52 MIN .00 AC-FT 2110
WTR YR 1980 TOTAL 210.44 MEAN .57 MAX 74 MIN .00 AC-FT 417

06427000 KEYHOLE RESERVOIR NEAR MOORCROFT, WY

LOCATION.--Lat 44°22'55", long 104°46'45", in NW¼NW¼ sec.27, T.51 N., R.66 W., Crook County, Hydrologic Unit 10120201, at reservoir dam on Belle Fourche River 12 mi (19 km) northeast of Moorcroft.

DRAINAGE AREA.--2,000 mi² (5,180 km²), approximately.

PERIOD OF RECORD.--March 1952 to current year (monthend contents only).

CORRECTIONS.--The contents and change in contents figures published in SD 79-1 for Sept. 30, 1979, are in error. The correct figures are 138,344 and -4,870.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation datum). Prior to May 15, 1958, and Oct. 1, 1968, to Mar. 13, 1970, nonrecording gages, and May 15, 1958, to Sept. 30, 1968, water-stage recorder, all at present site and datum.

REMARKS.--Reservoir is formed by a zoned earth-fill dam completed by the Bureau of Reclamation Oct. 25, 1952. Storage began Feb. 12, 1952. Dead storage, below elevation 4,036.0 ft (1,230.17 m), 1,170 acre-ft (1.44 hm³). Inactive storage, between elevations 4,036.0 ft (1,230.17 m) and 4,051.0 ft (1,234.74 m), 8,310 acre-ft (10.2 hm³). Total capacity below elevation 4,099.3 ft (1,249.47 m), crest of spillway, 199,900 acre-ft (246 hm³). Figures given herein represent total contents. The reservoir provides flood control and water for irrigation in Wyoming and near Belle Fourche, SD.

COOPERATION.--Records furnished by the Water and Power Resources Service.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 200,744 acre-ft (248 hm³) May 21, 1978, elevation, 4,100.38 ft (1,249.796 m); minimum daily contents (since appreciable storage was attained), 6,030 acre-ft (7.43 hm³) Mar. 8, 9, 1955, elevation, 4,046.35 ft (1,233.327 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 140,292 acre-ft (173 hm³) Apr. 15-21, elevation, 4,093.33 ft (1,247.647 m); minimum, 96,566 acre-ft (119 hm³) Sept. 30, elevation, 4,086.59 ft (1,245.593 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation	Contents	Change in contents
Sept. 30	4093.07	138344	
Oct. 31	4092.73	135877	-2467
Nov. 30	4092.51	134294	-1583
Dec. 31	4092.47	134006	-288
CAL YR 1979			-13178
Jan. 31	4092.43	133718	-288
Feb. 29	4093.04	138119	+4401
Mar. 31	4093.24	139618	+1499
Apr. 30	4093.21	139393	-225
May 31	4092.50	134222	-5171
June 30	4091.92	130071	-4151
July 31	4090.25	118750	-11321
Aug. 31	4086.90	98291	-20459
Sept. 30	4086.59	96566	-1725
WTR YR 1980			-41778

06428500 BELLE FOURCHE RIVER AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°44'59", long 104°02'49", in NE¼NW¼NW¼ sec.18, T.9 N., R.1 E., Butte County, Hydrologic Unit 10120202, on left bank 0.3 mi (0.5 km) downstream from State line, 3.7 mi (6.0 km) downstream from Oak Creek and 11 mi (18 km) northwest of Belle Fourche, SD.

DRAINAGE AREA.--3,280 mi² (8,500 km²), approximately.

PERIOD OF RECORD.--December 1946 to current year. Records for water year 1947 incomplete, yearly estimate published in WSP 1729.

GAGE.--Water-stage recorder. Datum of gage is 3,095.7 ft (943.57 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are poor. Diversions above station for irrigation of about 5,400 acres (2,200 hm²). Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm³), 143 mi (230 km) upstream since Oct. 25, 1952. Water-quality records for the station are published in the annual report "Water Resources Data for Wyoming."

AVERAGE DISCHARGE.--34 years, 90.5 ft³/s (2.563 m³/s), 65,570 acre-ft/yr (80.8 hm³/yr); median of yearly mean discharges, 88 ft³/s (2.49 m³/s), 63,800 acre-ft/yr (79 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,400 ft³/s (125 m³/s) June 18, 1962, gage height, 15.59 ft (4.752 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 431 ft³/s (12.2 m³/s) Aug. 20, gage height, 5.78 ft (1.762 m); maximum gage height, 6.11 ft (1.862 m) Feb. 29 (backwater from ice); minimum daily, 4.0 ft³/s (0.11 m³/s) Jan. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	15	14	10	4.5	40	54	33	105	9.4	67	63
2	11	14	14	10	5.0	44	49	32	108	9.1	148	58
3	10	15	14	10	5.0	42	50	31	99	8.0	225	49
4	9.9	18	15	10	5.5	40	47	32	94	7.4	269	44
5	9.4	17	16	10	5.5	42	46	34	83	6.3	300	39
6	9.0	16	15	8.0	5.5	42	44	32	82	11	320	36
7	9.2	16	15	6.0	5.5	42	44	30	91	43	321	33
8	10	15	15	5.0	5.5	42	43	29	92	46	311	31
9	9.9	15	15	5.0	6.0	42	43	29	88	43	299	31
10	9.5	14	16	5.5	5.5	44	43	28	81	36	312	29
11	9.2	17	15	5.0	5.5	44	44	27	76	35	320	55
12	10	17	13	5.5	5.5	44	45	26	73	46	320	150
13	11	16	14	6.0	5.0	42	46	28	70	61	313	55
14	10	16	15	6.5	5.0	45	44	29	58	69	194	50
15	11	19	14	7.0	4.5	50	41	27	58	75	138	120
16	12	17	12	6.5	4.8	50	42	27	118	80	279	90
17	16	16	12	6.5	4.8	50	44	26	115	75	302	45
18	14	18	13	6.0	5.5	50	44	25	76	80	372	40
19	12	17	13	5.5	7.0	48	46	27	64	81	354	35
20	12	17	13	5.5	8.0	48	45	24	43	89	386	35
21	19	15	13	5.5	9.0	48	44	22	37	99	265	35
22	15	15	13	5.5	10	50	44	20	32	105	181	35
23	14	15	13	6.0	10	55	45	19	28	103	258	35
24	14	15	13	7.0	11	55	45	17	24	104	327	33
25	14	14	13	6.5	20	55	44	61	21	105	336	33
26	14	14	13	6.0	35	56	44	76	18	118	337	30
27	14	14	12	5.5	50	58	41	78	16	141	346	29
28	16	14	12	5.0	48	62	39	81	13	153	346	28
29	17	13	11	4.5	45	66	37	83	12	146	201	23
30	16	13	11	4.0	---	66	34	88	10	63	97	22
31	15	---	10	4.5	---	60	---	90	---	38	75	---
TOTAL	384.1	467	417	199.5	347.1	1522	1321	1211	1885	2085.2	8399	1391
MEAN	12.4	15.6	13.5	6.44	12.0	49.1	44.0	39.1	62.8	67.3	271	46.4
MAX	19	19	16	10	50	66	54	90	118	153	386	150
MIN	9.0	13	10	4.0	4.5	40	34	17	10	6.3	67	22
AC-FT	762	926	827	396	688	3020	2620	2400	3740	4140	16660	2760

CAL YR 1979 TOTAL 21123.0 MEAN 57.9 MAX 350 MIN 4.0 AC-FT 41900
WTR YR 1980 TOTAL 19628.9 MEAN 53.6 MAX 386 MIN 4.0 AC-FT 38930

06429500 COLD SPRINGS CREEK AT BUCKHORN, WY

LOCATION.--Lat 44°09'14", long 104°04'39", in NW¼ sec.9, T.48 N., R.60 W., Weston County, Hydrologic Unit 10120303, on right shoulder of Cold Springs Creek road, 155 ft (47 m) upstream from centerline of U.S. Highway 85, and 0.5 mi (0.8 km) northeast of Buckhorn.

DRAINAGE AREA.--19.0 mi² (49.2 km²).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,090 ft (1,855 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--6 years, 4.65 ft³/s (0.132 m³/s), 3,450 acre-ft/yr (4.25 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12 ft³/s (0.34 m³/s) July 1, 1979, Apr. 22, 1980, gage height, 4.97 ft (1.515 m); maximum gage height, 8.61 ft (2.624 m) Jan. 12, 1978, backwater from ice; minimum daily discharge, 2.0 ft³/s (0.057 m³/s) Mar. 28, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12 ft³/s (0.34 m³/s) Apr. 22, gage height, 4.97 ft (1.515 m); maximum gage height, 5.63 ft (1.716 m) Mar. 17 (backwater from ice); minimum daily discharge, 3.0 ft³/s (0.085 m³/s) Sept. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	4.2	4.3	4.3	4.2	4.6	5.0	4.4	3.8	5.2	5.4	4.3
2	4.6	4.3	4.4	4.3	4.3	4.8	5.0	4.4	3.6	5.0	5.4	3.5
3	4.4	4.5	4.4	4.2	4.4	5.0	5.0	4.3	3.6	4.6	5.4	3.0
4	4.6	4.6	4.5	4.2	4.4	5.0	5.0	4.3	3.6	4.8	5.2	3.4
5	4.6	4.6	4.6	4.4	4.4	4.8	5.2	4.1	3.8	4.6	5.6	3.5
6	4.6	4.6	4.6	4.2	4.4	5.0	5.2	4.1	3.6	4.4	5.6	3.9
7	4.4	4.3	4.3	4.1	4.4	4.9	5.0	4.1	3.9	4.3	5.8	4.3
8	4.4	4.2	4.4	4.0	4.4	5.0	5.2	4.1	3.8	4.1	6.0	4.6
9	4.3	4.2	4.6	3.8	4.4	5.0	5.0	4.0	3.9	4.1	6.5	4.8
10	4.3	4.2	4.6	4.0	4.4	5.0	5.2	4.3	3.9	4.0	6.5	5.0
11	4.3	4.4	3.6	4.3	4.2	5.0	5.2	4.1	3.9	4.0	6.3	5.2
12	4.3	4.6	3.5	4.2	4.3	5.0	5.2	4.0	3.9	4.0	6.5	5.6
13	4.3	4.5	4.4	4.4	4.4	4.8	5.0	3.9	4.1	4.0	6.0	5.8
14	4.3	4.5	4.6	4.4	4.4	5.0	5.4	3.8	4.1	4.0	5.2	5.6
15	4.3	4.4	4.6	4.4	4.4	5.2	5.8	3.8	4.3	4.0	5.2	4.8
16	4.3	4.4	4.0	4.2	4.3	5.0	6.0	3.6	5.0	3.9	5.4	4.8
17	4.3	4.5	4.1	4.2	4.4	4.8	6.3	3.6	5.2	3.9	5.2	4.1
18	4.3	4.6	4.4	4.2	4.6	5.0	6.5	3.6	4.8	3.8	5.6	3.9
19	4.3	4.8	4.8	4.2	4.8	5.0	6.8	3.6	5.2	3.8	5.8	5.2
20	4.3	5.0	4.4	4.0	4.8	5.0	7.2	3.5	5.4	3.8	7.0	5.8
21	4.3	4.7	4.3	4.2	4.8	4.9	8.0	3.6	5.4	3.9	6.5	5.6
22	4.6	4.5	4.3	4.2	4.8	5.0	9.5	3.5	5.6	4.1	5.6	5.2
23	4.3	4.3	4.3	4.4	4.4	4.8	8.0	3.5	5.8	4.6	6.3	4.6
24	4.3	4.3	4.2	4.4	4.5	5.0	7.0	3.5	5.4	4.6	5.6	4.0
25	4.3	4.5	4.2	4.2	4.6	5.0	6.0	3.6	5.6	5.0	5.6	3.7
26	4.4	4.5	4.2	4.0	4.8	5.0	5.6	3.5	5.6	5.4	5.8	3.7
27	4.4	4.3	4.2	3.8	5.0	4.8	5.2	3.6	5.6	5.2	6.0	3.9
28	4.4	4.1	4.2	3.7	5.0	5.0	4.8	3.6	5.6	5.2	5.8	4.0
29	4.4	4.0	4.1	3.5	4.8	5.0	4.6	3.8	5.6	5.2	5.8	4.2
30	4.6	4.2	4.1	3.7	---	4.9	4.6	3.8	5.4	4.8	6.5	4.4
31	4.4	---	4.1	3.9	---	5.0	---	3.8	---	4.8	6.0	---
TOTAL	136.2	132.8	133.7	128.0	131.2	153.3	173.5	119.4	139.0	137.1	181.1	134.8
MEAN	4.39	4.43	4.31	4.13	4.52	4.95	5.78	3.85	4.63	4.42	5.84	4.49
MAX	4.6	5.0	4.8	4.4	5.0	5.2	9.5	4.4	5.8	5.4	7.0	5.8
MIN	4.3	4.0	3.5	3.5	4.2	4.6	4.6	3.5	3.6	3.8	5.2	3.0
AC-FT	270	263	265	254	260	304	344	237	276	272	359	267

CAL YR 1979 TOTAL 1664.7 MEAN 4.56 MAX 6.3 MIN 2.2 AC-FT 3300
WTR YR 1980 TOTAL 1700.1 MEAN 4.65 MAX 9.5 MIN 3.0 AC-FT 3370

06429895 SAND CREEK NEAR SUNDANCE, WY

LOCATION.--Lat 44°28'40", long 104°07'20", in SW¼SE¼ sec.24, T.52 N., R.61 W., Crook County, Hydrologic Unit 10120203, in channel 300 ft (91 m) upstream from Black Hills National Forest boundary, 1.1 mi (1.8 km) southwest from Ranch A, and 16 mi (26 km) northeast of Sundance.

DRAINAGE AREA.--256 sq mi (663 km^2), approximately.

PERIOD OF RECORD.--April 1978 to September 1980 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 3,830 ft (1,170 m), from topographic map.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, not determined; no flow for many days.

EXTREMES FOR CURRENT YEAR.--No flow during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

No flow during year

06429905 SAND CREEK NEAR RANCH A, NEAR BEULAH, WY

LOCATION.--Lat 44°31'13", long 104°05'00", in SE¼SW¼ sec.5, T.52 N., R.60 W., Crook County, Hydrologic Unit 10120203, on left bank 1.0 mi (1.6 km) upstream from Bear Gulch, and 1.6 mi (2.6 km) south of Beulah.

DRAINAGE AREA.--267 mi² (692 km²).

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,600 ft (1,100 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 96 ft³/s (2.72 m³/s) Apr. 29, 1978, gage height, 5.73 ft (1.747 m); minimum daily, 16 ft³/s (0.45 m³/s) Apr. 15-21, 1979.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 700 ft³/s (19.8 m³/s) June 15, 1976, gage height, 7.77 ft (2.368 m), from slope-area measurement of peak flow at site 3 mi (4.8 km) upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31 ft³/s (0.88 m³/s) June 14, gage height, 5.20 ft (1.585 m); minimum daily, 19 ft³/s (0.54 m³/s) Feb. 29 to Mar. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	22	24	22	21	19	20	22	23	24	21	22
2	22	23	24	22	21	19	20	22	24	24	21	22
3	21	23	23	22	20	19	20	22	24	24	21	22
4	21	24	23	22	20	19	20	21	24	24	20	22
5	21	23	23	22	20	19	20	21	24	24	20	21
6	21	23	23	23	20	19	20	22	25	24	20	21
7	21	23	23	23	20	19	20	22	25	24	20	22
8	21	23	22	23	20	19	20	22	24	24	20	21
9	22	24	22	23	20	20	20	22	24	24	20	22
10	22	24	22	23	20	20	20	22	24	24	20	22
11	22	23	22	22	20	20	20	22	24	24	20	23
12	22	23	22	22	20	20	20	22	24	24	21	24
13	22	23	22	22	20	20	20	22	24	23	20	22
14	22	23	22	22	20	20	20	22	26	23	20	22
15	22	23	22	22	20	20	20	22	26	23	20	22
16	22	24	22	22	20	20	20	22	26	23	20	22
17	22	24	22	21	20	20	20	22	24	22	20	22
18	22	24	22	21	20	20	20	22	24	22	20	22
19	22	23	22	22	20	20	20	22	24	23	21	22
20	22	23	22	22	20	20	20	22	24	22	21	22
21	23	23	22	22	20	20	21	22	24	22	21	21
22	23	22	22	21	20	20	21	23	24	22	21	21
23	23	23	22	21	20	20	21	24	24	22	21	21
24	23	23	22	21	20	20	21	24	24	22	21	21
25	23	23	22	22	20	20	21	23	24	22	21	22
26	24	23	22	22	20	20	20	23	24	22	21	22
27	23	23	22	22	20	20	21	23	24	22	21	22
28	23	24	22	21	20	20	21	23	24	21	21	21
29	23	24	22	21	19	20	21	23	24	21	21	21
30	23	24	22	21	---	20	22	23	24	21	21	21
31	23	---	22	21	---	20	---	23	---	21	22	---
TOTAL	688	697	691	678	581	612	610	692	727	707	638	653
MEAN	22.2	23.2	22.3	21.9	20.0	19.7	20.3	22.3	24.2	22.8	20.6	21.8
MAX	24	24	24	23	21	20	22	24	26	24	22	24
MIN	21	22	22	21	19	19	20	21	23	21	20	21
AC-FT	1360	1380	1370	1340	1150	1210	1210	1370	1440	1400	1270	1300

CAL YR 1979 TOTAL 8534 MEAN 23.4 MAX 28 MIN 16 AC-FT 16930
WTR YR 1980 TOTAL 7974 MEAN 21.6 MAX 26 MIN 19 AC-FT 15820

06430000 MURRAY DITCH AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°34'35", long 104°02'58", in SW¼SW¼ sec.7, T.7 N., R.1 E., Butte County, Hydrologic Unit 10120203, on right bank 15 ft (5 m) downstream from State line and 12 mi (19 km) southwest of Belle Fourche, SD.

PERIOD OF RECORD.--June 1954 to current year (irrigation seasons only prior to October 1959).

GAGE.--Water-stage recorder. Altitude of gage is 3,440 ft (1,050 m), from topographic map.

REMARKS.--Records fair. Ditch diverts water from left bank of Redwater Creek, 2.0 mi (3.2 km) upstream, for irrigation of about 700 acres (283 hm^2). Flow maintained during irrigation season only. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 37 ft^3/s (1.05 m^3/s) July 17, 1973; no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 26 ft^3/s (0.74 m^3/s) May 24, Aug. 31, gage height, 2.37 ft (0.722 m); no flow for long periods.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	.00	.00	.00	.00	.00	.00	.00	9.2	9.4	5.5	19
2	12	.00	.00	.00	.00	.00	.00	.00	9.4	11	6.5	17
3	11	.00	.00	.00	.00	.00	.00	.00	9.4	9.0	7.5	13
4	12	.00	.00	.00	.00	.00	.00	.00	8.9	5.7	8.0	13
5	11	.00	.00	.00	.00	.00	.00	.00	7.3	5.3	8.5	12
6	11	.00	.00	.00	.00	.00	.00	.00	6.9	5.8	9.0	4.3
7	8.1	.00	.00	.00	.00	.00	.00	.00	3.6	5.1	10	2.6
8	7.6	.00	.00	.00	.00	.00	.00	.00	.85	6.9	11	1.9
9	12	.00	.00	.00	.00	.00	.00	.00	5.5	8.0	12	5.1
10	12	.00	.00	.00	.00	.00	.00	.00	5.4	7.9	12	8.5
11	12	.00	.00	.00	.00	.00	.00	.00	5.2	6.8	12	9.5
12	13	.00	.00	.00	.00	.00	.00	.00	5.2	8.4	12	9.1
13	14	.00	.00	.00	.00	.00	.00	.00	5.3	11	11	7.4
14	10	.00	.00	.00	.00	.00	.00	.00	5.6	12	14	4.4
15	7.5	.00	.00	.00	.00	.00	.00	.00	.06	12	15	2.4
16	5.2	.00	.00	.00	.00	.00	.00	.00	.00	12	14	3.3
17	5.1	.00	.00	.00	.00	.00	.00	.00	.00	14	14	.96
18	4.4	.00	.00	.00	.00	.00	.00	.00	.00	16	15	.45
19	2.8	.00	.00	.00	.00	.00	.00	.47	.00	17	14	.24
20	2.2	.00	.00	.00	.00	.00	.00	.00	.00	19	12	.12
21	.80	.00	.00	.00	.00	.00	.00	.90	.00	18	15	.03
22	.30	.00	.00	.00	.00	.00	.00	.00	.00	18	14	.00
23	.21	.08	.00	.00	.00	.00	.00	9.1	.00	13	16	.00
24	.06	.21	.00	.00	.00	.00	.00	26	.00	10	15	.00
25	.00	.06	.00	.00	.00	.00	.00	20	.38	10	15	.00
26	.00	.28	.00	.00	.00	.00	.00	16	3.8	10	16	.00
27	.00	.70	.00	.00	.00	.00	.00	16	8.2	12	18	.00
28	.00	.00	.00	.00	.00	.00	.00	9.4	10	12	20	.00
29	.02	.00	.00	.00	.00	.00	.00	12	7.3	13	24	.00
30	.00	.00	.00	.00	---	.00	.00	11	8.5	9.2	25	.00
31	.00	---	.00	.00	---	.00	---	8.9	---	5.6	26	---
TOTAL	163.79	1.33	.00	.00	.00	.00	.00	129.77	125.99	333.1	427.0	134.30
MEAN	5.93	.044	.000	.000	.000	.000	.000	4.19	4.20	10.7	13.8	4.48
MAX	14	.70	.00	.00	.00	.00	.00	26	10	19	26	19
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.1	5.5	.00
AC-FT	365	2.6	.00	.00	.00	.00	.00	257	250	661	847	266

CAL YR 1979 TOTAL 1363.76 MEAN 3.74 MAX 27 MIN .00 AC-FT 2710
WTR YR 1980 TOTAL 1335.28 MEAN 3.65 MAX 26 MIN .00 AC-FT 2650

06430500 REDWATER CREEK AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°34'26", long 104°02'54", in NW¼NW¼ sec.18, T.7 N., R.1 E., Butte County, Hydrologic Unit 10120203, on left bank 800 ft (244 m) downstream from State line, 5.7 mi (9.2 km) upstream from Crow Creek, and 12 mi (19 km) southwest of Belle Fourche, SD.

DRAINAGE AREA.--471 mi^2 (1,220 km^2).

PERIOD OF RECORD.--April 1929 to September 1931 and February 1936 to July 1937 (published as "near Beulah, WY"), June 1954 to current year.

REVISED RECORDS.--WSP 1309: 1931(M), 1936-37(M).

GAGE.--Water-stage recorder. Altitude of gage is 3,410 ft (1,040 m), from topographic map. Apr. 25, 1929, to Sept. 30, 1931, and Feb. 28, 1936, to July 31, 1937, nonrecording gage at site 2 mi (3 km) upstream at different datum.

REMARKS.--Records good. Large diversions for irrigation above station. Total flow passing State line may be obtained by adding flow of Murray ditch (see station 06430000). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--28 years, 36.6 ft^3/s (1.037 m^3/s), 26,520 acre-ft/yr (32.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,440 ft^3/s (69.1 m^3/s) Aug. 22, 1973, gage height, 12.19 ft (3.716 m), from rating curve extended above 1,000 ft^3/s (27 m^3/s) on basis of slope-area measurement at gage height 11.95 ft (3.462 m); no flow Aug. 13-15, 1929.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 738 ft^3/s (20.9 m^3/s) June 14, gage height, 6.65 ft (2.027 m), no other peak above base of 150 ft^3/s (4.25 m^3/s); minimum daily discharge, 2.0 ft^3/s (0.06 m^3/s) July 18, 20.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 23 to Sept. 30; stage-discharge relation affected by ice Nov. 29, Dec. 16, 17, Jan. 6-12, Jan. 26 to Feb. 2, Feb. 16, 17)

1.8	2.0	2.5	39	3.3	122
2.0	8.8	2.9	74	3.7	179
2.2	19				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	37	37	36	35	35	33	25	18	18	22	25
2	23	38	37	36	35	34	32	25	21	18	20	24
3	22	37	37	36	35	33	34	24	21	19	22	24
4	22	37	38	36	35	35	33	26	21	19	17	22
5	21	37	39	36	36	34	33	28	22	17	16	22
6	16	36	38	35	37	34	33	32	25	18	17	31
7	17	37	38	35	36	34	33	33	26	15	16	33
8	19	37	38	36	35	34	31	33	23	5.1	6.2	29
9	16	38	38	36	36	34	31	33	18	4.8	8.8	25
10	16	38	38	37	35	34	32	32	23	4.8	5.2	19
11	15	39	38	36	35	34	33	30	24	4.6	7.6	20
12	12	38	37	37	36	35	32	30	24	4.1	4.0	19
13	12	38	37	34	37	34	32	29	25	3.7	3.9	18
14	12	38	37	34	36	33	32	30	166	3.0	4.5	20
15	21	38	38	33	36	33	32	31	101	2.8	5.4	20
16	29	38	37	33	36	34	31	31	51	2.5	6.1	21
17	29	38	36	33	36	33	31	32	46	2.2	6.8	26
18	32	38	36	33	36	33	30	32	37	2.0	7.0	26
19	35	38	35	34	37	33	31	25	37	3.2	7.1	27
20	35	38	35	33	36	33	36	22	37	2.0	9.6	27
21	37	38	36	34	36	33	36	23	36	2.1	8.5	27
22	38	38	36	34	35	34	36	20	36	2.3	12	26
23	38	38	36	34	35	33	34	15	35	2.2	14	26
24	38	38	35	34	34	33	32	9.2	35	2.9	17	27
25	38	38	35	35	34	33	31	9.2	32	4.6	17	27
26	38	38	35	35	34	33	32	7.7	29	7.9	18	28
27	38	37	35	35	34	33	31	9.0	28	10	20	28
28	38	38	35	34	35	34	29	21	30	9.9	20	28
29	39	38	36	34	34	33	26	13	31	11	16	27
30	38	37	36	35	---	34	27	15	24	18	11	26
31	38	---	36	35	---	34	---	19	---	34	19	---
TOTAL	846	1131	1135	1078	1027	1043	959	744.1	1082	273.7	384.7	748
MEAN	27.3	37.7	36.6	34.8	35.4	33.6	32.0	24.0	36.1	8.83	12.4	24.9
MAX	39	39	39	37	37	35	36	33	166	34	22	33
MIN	12	36	35	33	34	33	26	7.7	18	2.0	3.9	18
AC-FT	1680	2240	2250	2140	2040	2070	1900	1480	2150	543	763	1480

CAL YR 1979 TOTAL 12307.9 MEAN 33.7 MAX 54 MIN 5.4 AC-FT 24410
WTR YR 1980 TOTAL 10451.5 MEAN 28.6 MAX 166 MIN 2.0 AC-FT 20730

06431500 SPEARFISH CREEK AT SPEARFISH, SD

LOCATION.--Lat 44°28'57", long 103°51'40", in SE¼NW¼ sec.15, T.6 N., R.2 E., Lawrence County, Hydrologic Unit 10120203, on right bank in city park in Spearfish, 500 ft (152 m) downstream from fish hatchery and nearest tributary, and 9.8 mi (15.8 km) upstream from mouth.

DRAINAGE AREA.--168 mi^2 (435 km^2).

PERIOD OF RECORD.--October 1946 to current year.

REVISED RECORDS.--WSP 1116: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,640 ft (1,110 m), from topographic map. Prior to Dec. 5, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Regulation by fish hatchery and by hydroelectric plant 0.5 mi (0.8 km) upstream causes diurnal fluctuation, but since storage capacity is small, daily flows are not appreciably affected. Prior to water year 1962 average monthly diversion by Homestake Mining Co. about 7 ft^3/s (0.20 m^3/s). Figures of daily discharge do not include diversion by Homestake Mining Co. Several observations of water temperature and specific conductance were made during the year.

COOPERATION.--Figures of monthly diversion are furnished by Homestake Mining Co.

AVERAGE DISCHARGE.--34 years, 51.7 ft^3/s (1.464 m^3/s), 37,460 acre-ft/yr (46.2 hm^3/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,240 ft^3/s (120 m^3/s) May 15, 1965, gage height, 10.53 ft (3.210 m), from rating curve extended above 520 ft^3/s (14.7 m^3/s) on basis of slope-area measurement of peak flow; maximum gage height, 10.54 ft (3.213 m) June 15, 1976; no flow for part of Oct. 18, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 5, 1904, reached a stage of 7.00 ft (2.134 m), site and datum of former gage near Spearfish, 1 mi (2 km) upstream, drainage area, 157 mi^2 (407 km^2); discharge about 5,000 ft^3/s (142 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 85 ft^3/s (2.41 m^3/s) Apr. 21, gage height, 5.35 ft (1.631 m); maximum gage height, 7.89 ft (2.405 m) Jan. 30 (backwater from ice); minimum daily, 29 ft^3/s (0.82 m^3/s) July 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	48	58	48	53	41	44	57	61	41	40	44
2	48	48	55	47	57	44	44	57	55	44	40	47
3	50	48	52	46	53	44	44	56	51	51	42	46
4	52	47	56	46	44	44	44	57	52	45	42	46
5	53	46	48	46	44	41	45	62	52	43	42	44
6	57	46	41	40	43	45	48	59	53	42	40	43
7	58	46	39	35	43	43	48	56	53	41	42	43
8	60	49	43	30	39	44	44	56	52	41	43	41
9	66	53	41	38	43	45	43	56	49	39	44	41
10	64	53	45	54	45	45	44	62	48	38	45	40
11	62	55	46	50	39	45	45	63	45	37	44	38
12	62	58	44	51	41	44	43	60	44	37	44	40
13	60	57	55	50	43	43	45	59	44	41	44	41
14	59	56	55	51	44	45	47	58	45	39	46	39
15	58	54	53	48	43	48	49	58	51	40	47	39
16	58	54	50	47	45	48	57	57	49	38	48	42
17	58	54	47	47	48	45	54	57	50	29	48	42
18	55	53	53	48	47	46	55	57	43	46	47	43
19	53	51	51	47	47	46	60	57	52	46	47	40
20	51	50	50	48	47	46	67	56	47	46	49	39
21	50	48	50	49	46	45	73	55	45	46	49	39
22	52	46	48	49	45	46	76	54	45	43	45	41
23	54	45	47	50	44	45	74	52	46	42	45	41
24	54	47	49	49	43	43	70	54	44	41	44	40
25	52	47	50	48	44	43	66	54	43	43	46	41
26	50	47	49	46	42	43	65	54	42	47	44	39
27	50	46	45	46	44	41	63	50	41	50	46	39
28	49	45	47	44	42	43	59	39	39	45	43	39
29	48	48	46	42	41	43	58	35	40	45	43	38
30	48	54	44	46	---	45	59	60	40	42	45	38
31	49	---	47	49	---	45	---	55	---	42	44	---
TOTAL	1688	1499	1504	1435	1299	1374	1633	1722	1421	1310	1378	1233
MEAN	54.5	50.0	48.5	46.3	44.8	44.3	54.4	55.5	47.4	42.3	44.5	41.1
MAX	66	58	58	54	57	48	76	63	61	51	49	47
MIN	48	45	39	30	39	41	43	35	39	29	40	38
AC-FT	3350	2970	2980	2850	2580	2730	3240	3420	2820	2600	2730	2450

CAL YR 1979 TOTAL 19895 MEAN 54.5 MAX 79 MIN 39 AC-FT 39460
WTR YR 1980 TOTAL 17496 MEAN 47.8 MAX 76 MIN 29 AC-FT 34700

06433000 REDWATER RIVER ABOVE BELLE FOURCHE, SD

LOCATION.--Lat 44°40'02", long 103°50'20", in NW¼SE¼ sec.11, T.8 N., R.2 E., Butte County, Hydrologic Unit 10120203, on right bank at upstream side of bridge on U.S. Highway 212 in Belle Fourche, 0.5 mi (0.8 km) upstream from Hay Creek and 0.9 mi (1.4 km) upstream from mouth.

DRAINAGE AREA.--920 mi² (2,383 km²).

PERIOD OF RECORD.--November 1945 to current year. Records for water year 1946 incomplete, yearly discharge published in WSP 1309. Prior to October 1960, published as Redwater Creek above Belle Fourche.

REVISED RECORDS.--WSP 1389: 1954 (maximum gage height only).

GAGE.--Water-stage recorder. Altitude of gage is 3,000 ft (910 m), from topographic map. Prior to Dec. 13, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Diversions for irrigation of about 13,000 acres (5,260 hm²) above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--35 years, 135 ft³/s (3.823 m³/s), 97,810 acre-ft/yr (121 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,400 ft³/s (464 m³/s) June 16, 1962, gage height, 11.69 ft (3.563 m), from rating curve extended above 6,000 ft³/s (170 m³/s) on basis of slope-area measurement of peak flow; no flow for part of Aug. 5, 1960, Aug. 8-10, 1968, and Aug. 13, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 570 ft³/s (16.1 m³/s) June 15, gage height, 4.30 ft (1.311 m); maximum gage height, 10.98 ft (3.347 m), backwater from ice, no other peak above base of 500 ft³/s (14.2 m³/s); minimum daily discharge, 0.12 ft³/s (0.003 m³/s) Aug. 7.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 24 to July 7, Aug. 22 to Sept. 30; stage-discharge relation affected by ice Nov. 27 to Dec. 2, Dec. 11-19, Dec. 29 to Jan. 1, Jan. 4-22, Jan. 26 to Feb. 9, Feb. 11, 12, 15-19, Mar. 1, 2, 5, 6)

1.58	0	2.0	12	2.9	120
1.6	.30	2.2	25	3.4	251
1.8	4.5	2.5	55	3.7	360

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81	149	150	145	150	140	148	110	12	15	3.1	42
2	81	148	155	146	155	140	146	107	22	4.6	2.7	47
3	76	148	159	152	155	144	144	109	21	2.9	2.8	45
4	78	148	154	150	155	145	142	111	21	3.7	2.5	47
5	74	151	154	150	155	145	140	118	28	4.6	2.4	51
6	77	150	155	140	155	145	138	95	45	5.0	.56	47
7	78	149	154	130	155	144	134	94	61	4.4	.12	47
8	81	149	152	120	150	145	130	81	65	4.0	.19	47
9	82	149	154	115	150	144	128	77	69	3.8	1.9	49
10	86	150	155	120	150	145	128	91	69	3.5	2.8	53
11	97	149	155	120	145	144	133	93	68	3.2	1.0	59
12	102	150	155	125	140	147	127	84	70	2.6	.80	89
13	104	150	155	130	141	142	123	79	70	2.3	.77	83
14	108	149	155	135	146	144	123	63	104	2.0	2.4	84
15	109	151	150	140	140	147	122	46	332	1.8	3.4	83
16	112	151	140	140	135	149	133	43	164	1.8	4.4	86
17	121	151	145	145	140	146	130	52	118	1.8	5.3	87
18	123	154	155	140	140	145	124	52	112	2.5	5.9	91
19	125	152	150	135	145	146	126	45	108	2.7	5.8	95
20	124	151	149	135	141	146	129	35	106	3.0	6.3	96
21	129	152	148	140	141	144	131	27	98	3.2	7.5	95
22	132	148	148	140	142	149	138	18	97	3.1	8.2	96
23	130	151	146	140	140	147	139	12	89	1.3	9.3	94
24	134	153	146	141	140	148	137	17	81	1.7	11	92
25	133	153	147	143	138	148	126	9.0	71	3.8	12	92
26	137	151	147	140	140	152	122	7.6	55	4.2	12	90
27	136	150	146	130	145	156	120	7.2	44	3.1	17	89
28	138	150	147	130	147	154	118	7.0	39	2.6	18	87
29	140	150	145	135	139	152	112	7.6	29	3.7	20	88
30	140	150	145	140	---	150	114	7.8	21	3.1	28	90
31	144	---	145	145	---	150	---	9.2	---	2.8	38	---
TOTAL	3412	4507	4661	4237	4215	4543	3905	1714.4	2289	107.8	236.14	2241
MEAN	110	150	150	137	145	147	130	55.3	76.3	3.48	7.62	74.7
MAX	144	154	159	152	155	156	148	118	332	15	38	96
MIN	74	148	140	115	135	140	112	7.0	12	1.3	.12	42
AC-FT	6770	8940	9250	8400	8360	9010	7750	3400	4540	214	468	4450

CAL YR 1979 TOTAL 45352.10 MEAN 124 MAX 283 MIN 6.9 AC-FT 89960
WTR YR 1980 TOTAL 36068.34 MEAN 98.5 MAX 332 MIN .12 AC-FT 71540

06433500 HAY CREEK AT BELLE FOURCHE, SD

LOCATION.--Lat 44°40'01", long 103°50'46", in NW¼SW¼ sec.11, T.8 N., R.2 E., Butte County, Hydrologic Unit 10120203, on right bank at intersection of Tenth Avenue and Jackson Street in Belle Fourche, 0.5 mi (0.8 km) upstream from mouth.

DRAINAGE AREA.--121 mi² (313 km²).

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,005.18 ft (915.979 m) National Geodetic Vertical Datum of 1929 (City of Belle Fourche bench mark). Prior to Dec. 8, 1953, nonrecording gage at site 300 ft (91 m) downstream at same datum.

REMARKS.--Records fair. Minor diversion to the stream at times from city reservoir overflow, which enters stream above gage. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--27 years, 1.43 ft³/s (0.040 m³/s), 1,040 acre-ft/yr (1.28 hm³/yr); median of yearly mean discharges, 1.0 ft³/s (0.03 m³/s), 720 acre-ft/yr (0.89 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 930 ft³/s (26.3 m³/s) June 19, 1972, gage height, 9.15 ft (2.789 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 75 ft³/s (2.12 m³/s) Sept. 12, gage height, 5.53 ft (1.686 m), no other peak above base of 50 ft³/s (1.42 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.06	.28	.09	2.0	.00	.00	.00
2	.00	.00	.00	.00	.00	.06	.39	.12	.84	.00	.00	.00
3	.00	.00	.00	.00	.05	.06	.39	.11	.32	.00	.00	.00
4	.00	.00	.01	.00	.10	.06	.19	.12	.09	.00	.00	.00
5	.00	.00	.00	.00	.08	.04	.18	.13	.25	.00	.00	.00
6	.00	.00	.00	.00	.01	.02	.21	.07	1.0	.00	.00	.00
7	.00	.00	.00	.00	.02	.02	.23	.02	.32	.00	.00	.00
8	.00	.00	.00	.00	.04	.02	.21	.00	.15	.00	.00	.00
9	.00	.00	.00	.00	.04	.02	.16	.25	.06	.00	.00	.00
10	.50	.00	.00	.00	.04	.06	.28	.33	.01	.00	.00	.00
11	.04	.00	.00	.00	.03	.08	.51	.19	.00	.00	.00	1.4
12	.04	.00	.00	.00	.03	.10	.24	.13	.00	.00	.00	31
13	.85	.00	.00	.00	.02	.14	.14	.11	.00	.00	.00	3.6
14	.18	.00	.00	.00	.00	.16	.20	.09	1.6	.00	.00	.84
15	.14	.00	.00	.00	.00	.16	.10	.06	8.7	.00	.00	.31
16	.24	.00	.00	.00	.00	.16	.28	.02	21	.00	.00	.25
17	.00	.00	.00	.00	.00	.12	.14	.00	4.3	.00	.00	.04
18	.07	.00	.00	.00	.00	.10	.09	.00	1.8	.00	.00	.00
19	.00	.00	.00	.00	.02	.08	.05	.00	1.3	.00	.00	.00
20	.00	.00	.00	.00	.08	.06	.12	.00	.76	.00	.00	.00
21	.00	.00	.00	.00	.12	.06	.09	.00	1.0	.00	.00	.00
22	.07	.00	.00	.00	.18	.20	.04	.00	.44	.00	.00	.00
23	.00	.00	.00	.00	.16	.15	.07	.00	.07	.00	.00	.00
24	.00	.00	.00	.00	.14	.25	.08	.00	.01	.00	.08	.00
25	.00	.00	.00	.00	.18	.17	.05	.01	.00	.00	.00	.00
26	.00	.00	.00	.00	.12	.14	.07	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.10	.11	.06	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.09	.38	.03	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.08	.16	.08	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.14	.07	.10	.00	.00	.77	.00
31	.00	---	.00	.00	---	.18	---	.30	---	.00	.18	---
TOTAL	2.13	.00	.01	.00	1.73	3.52	5.03	2.25	46.02	.00	1.03	37.44
MEAN	.069	.000	.000	.000	.060	.11	.17	.073	1.53	.000	.033	1.25
MAX	.85	.00	.01	.00	.18	.38	.51	.33	21	.00	.77	31
MIN	.00	.00	.00	.00	.00	.02	.03	.00	.00	.00	.00	.00
AC-FT	4.2	.00	.02	.00	3.4	7.0	10.0	4.5	91	.00	2.0	74

CAL YR 1979 TOTAL 347.05 MEAN .95 MAX 25 MIN .00 AC-FT 688
WTR YR 1980 TOTAL 99.16 MEAN .27 MAX 31 MIN .00 AC-FT 197

06434500 INLET CANAL NEAR BELLE FOURCHE, SD

LOCATION.--Lat 44°42'14", long 103°49'23", in NE¼NW¼ sec.36, T.9 N., R.2 E., Butte County, Hydrologic Unit 10120202, on right bank 0.5 mi (0.8 km) downstream from Crow Creek, 0.9 mi (1.4 km) downstream from diversion dam on Belle Fourche River, and 2.5 mi (4.0 km) northeast of Belle Fourche.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year. Monthly diversions from Inlet Canal between station and reservoir for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,985.22 ft (909.895 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 10, 1946, nonrecording gage, and Dec. 10, 1946, to Nov. 26, 1949, water-stage recorder at site 0.8 mi (1.3 km) upstream at same datum.

REMARKS.--Records good except those for winter periods, which are poor. Records show actual diversions to Belle Fourche Reservoir (see station 06435000), from Belle Fourche River and Crow Creek, except for 2,864 acre-ft (3.53 hm^3) which was diverted for irrigation from the canal between the station and reservoir.

COOPERATION.--Records of diversion from the canal furnished by Water and Power Resources Service.

AVERAGE DISCHARGE.--35 years, 164 ft^3/s (4.644 m^3/s), 118,800 acre-ft/yr (146 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,340 ft^3/s (37.9 m^3/s) May 30, 1962, Mar. 21, 1978; no flow for many days in 1946-49, 1963, 1966, 1971-76, 1978-79.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	118	172	160	160	155	165	192	152	137	28	56	125
2	101	171	165	160	160	165	186	147	119	21	96	119
3	101	170	170	160	160	160	184	146	109	20	176	109
4	103	173	175	160	160	155	184	146	110	20	225	99
5	96	175	174	140	160	155	178	154	114	20	266	98
6	95	172	175	130	165	170	177	133	158	20	294	90
7	93	172	177	125	160	180	175	129	165	19	315	86
8	97	171	174	120	165	180	173	109	176	23	328	86
9	99	168	179	120	165	180	174	100	177	28	310	84
10	100	169	180	130	160	190	177	120	166	29	315	85
11	115	173	165	130	160	200	190	122	156	29	329	128
12	118	174	169	135	160	210	183	108	157	29	321	289
13	124	172	170	140	155	220	180	105	155	30	324	145
14	129	169	170	140	150	210	180	91	300	36	291	143
15	131	171	175	145	150	200	180	68	887	41	184	274
16	133	179	160	150	145	186	194	60	508	65	198	208
17	145	176	150	150	145	182	194	68	349	76	343	141
18	154	176	150	145	150	181	189	68	323	76	394	136
19	152	177	160	140	150	188	193	61	262	75	363	136
20	149	177	165	140	155	199	194	50	230	76	381	136
21	157	177	166	140	150	206	196	33	193	77	377	137
22	165	162	165	145	150	224	204	24	180	81	236	137
23	158	169	165	150	150	215	207	19	160	91	219	133
24	160	173	167	150	150	241	209	19	152	99	314	131
25	160	174	168	145	150	227	193	18	150	110	350	129
26	165	172	166	140	153	234	188	53	119	115	345	122
27	157	167	164	140	166	205	186	76	65	138	356	121
28	158	154	160	140	173	235	177	76	55	153	363	118
29	164	150	160	145	170	211	169	83	49	165	324	116
30	167	150	160	150	---	204	161	92	35	130	188	115
31	169	---	160	150	---	199	---	107	---	65	144	---
TOTAL	4133	5105	5164	4415	4542	6077	5567	2737	5916	1985	8725	3976
MEAN	133	170	167	142	157	196	186	88.3	197	64.0	281	133
MAX	169	179	180	160	173	241	209	154	887	165	394	289
MIN	93	150	150	120	145	155	161	18	35	19	56	84
AC-FT	8200	10130	10240	8760	9010	12050	11040	5430	11730	3940	17310	7890

CAL YR 1979 TOTAL 63925.00 MEAN 175 MAX 633 MIN .00 AC-FT 126800
WTR YR 1980 TOTAL 58342.00 MEAN 159 MAX 887 MIN 18 AC-FT 115700

06434500 INLET CANAL NEAR BELLE FOURCHE, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to September 1978.
WATER TEMPERATURES: October 1968 to September 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,100 micromhos Feb. 13, 1969; minimum daily, 335 micromhos Feb. 12, 1971.
WATER TEMPERATURES: Maximum daily, 29.0°C July 1, 1971; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)
OCT										
04...	1315	104	1460	8.6	11.0	650	570	180	48	29
NOV										
07...	1630	170	1340	8.3	4.5	730	550	210	50	22
DEC										
05...	0830	175	1360	8.4	3.0	720	510	210	48	23
JAN										
09...	1400	120	1580	8.2	.0	860	650	260	51	11
MAR										
05...	0945	155	1400	8.3	.0	750	540	220	49	26
APR										
08...	1715	176	1320	8.5	10.0	730	550	210	51	29
MAY										
07...	1300	128	1500	8.2	15.0	800	630	230	55	34
JUN										
04...	0845	113	1310	8.1	18.0	560	390	150	45	95
JUL										
01...	1415	29	1720	8.1	22.0	810	640	220	64	55
AUG										
06...	1545	301	1280	8.0	20.0	360	190	91	32	130
SEP										
09...	1515	8.4	1500	8.0	18.5	780	620	220	56	60

06434500 INLET CANAL NEAR BELLE FOURCHE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT									
04...	12	.5	3.9	33	74	590	4.1	.4	8.3
NOV									
07...	6	.4	3.3	25	180	540	4.4	.3	10
DEC									
05...	9	.4	3.0	26	210	540	4.1	.3	9.1
JAN									
09...	4	.2	3.0	14	210	600	4.0	.4	12
MAR									
05...	7	.4	4.2	30	210	600	4.7	.3	9.1
APR									
08...	8	.5	3.8	--	180	580	3.6	.4	8.2
MAY									
07...	8	.5	4.2	--	170	640	4.5	.4	7.8
JUN									
04...	27	1.7	8.3	--	170	590	12	.6	6.5
JUL									
01...	13	.8	6.9	--	170	730	5.0	.3	9.2
AUG									
06...	43	3.0	10	--	170	440	16	.7	2.8
SEP									
09...	14	.9	6.9	--	160	700	7.4	.5	8.1

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1360	---	1160	---	1400	---	1250	---	1370	1550	1360	---
2	---	---	---	1440	---	---	1300	---	1270	1650	1410	---
3	1400	1200	1120	1300	---	1280	1270	1360	1280	1780	1370	1440
4	---	---	1130	1290	---	---	1260	---	1270	1780	1220	1440
5	1380	1300	1080	---	---	---	---	---	1290	1750	1200	---
6	---	---	1090	---	1420	1320	---	1580	1120	1770	1140	---
7	---	---	1100	1480	---	---	1370	---	1250	1770	1140	---
8	1360	---	1100	---	1240	---	1300	---	1260	2240	1130	1520
9	1380	1220	---	---	---	---	1320	---	1260	1960	1150	---
10	1400	---	---	1480	---	1280	1340	---	1270	1960	1150	---
11	---	---	1180	1460	1230	1260	1340	1410	1240	1670	1150	---
12	1340	1300	1110	1300	1200	1270	---	1500	1250	1500	1150	---
13	1350	1300	1110	---	---	1280	---	1650	1240	1440	1150	---
14	---	---	1100	1320	---	1280	1410	1660	1080	1360	1140	---
15	1360	1280	1170	1270	---	---	---	1690	840	1290	1170	1420
16	1360	1300	---	1270	---	---	1330	1680	1080	1270	1220	1310
17	---	1280	1280	1270	---	1280	---	1690	1140	1210	1190	1300
18	---	1340	1130	---	---	1280	1370	1850	1280	1220	1130	---
19	1320	1350	1140	---	1210	1230	---	1850	1300	1220	1130	---
20	---	1340	---	---	---	1170	---	1900	1160	1230	1130	---
21	---	---	1120	1280	1230	---	1360	1910	1190	1230	1130	---
22	1340	---	1130	---	1240	---	---	1980	1220	1230	1100	1380
23	---	1270	---	---	---	---	---	1860	1250	1220	1230	1360
24	---	1260	1140	---	---	1230	---	1860	1250	1240	1220	---
25	1320	---	---	1270	1240	1250	1290	1990	1280	1230	1180	1360
26	1300	1280	---	---	1220	1200	---	2230	1300	1210	1170	---
27	1340	---	1150	---	---	---	---	2030	1330	1200	1200	---
28	---	1370	1150	1460	1250	---	---	2050	1330	1190	1210	---
29	1340	---	1160	1440	1240	---	---	---	1400	1190	1190	---
30	---	1420	---	1540	---	---	1310	1460	1460	1170	1330	1370
31	1340	---	1160	1520	---	1320	---	1410	---	1230	1340	---
MEAN	1350	1300	1140	1380	1260	1260	1320	1750	1240	1450	1200	1390

06434500 INLET CANAL NEAR BELLE FOURCHE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT									
04...	909	1.24	255	.06	.010	.010	.03	.09	--
NOV									
07...	950	1.29	436	.47	.030	.010	.01	.03	--
DEC									
05...	965	1.31	456	.36	.030	.040	.03	.09	--
JAN									
09...	1070	1.46	347	.48	.240	.030	.03	.09	--
MAR									
05...	1040	1.41	435	.23	.040	.000	.00	.00	--
APR									
08...	995	1.35	473	.13	.050	.020	.01	.03	--
MAY									
07...	1080	1.47	373	.01	.050	.030	.01	.03	--
JUN									
04...	1010	1.37	308	.03	.190	.010	.00	.00	--
JUL									
01...	1190	1.62	94.1	.00	.030	.000	.00	.00	--
AUG									
06...	825	1.12	670	.10	.510	.040	.00	.00	--
SEP									
09...	1160	1.58	26.3	.00	.060	.000	.02	.06	--

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	---	.0	---	.0	---	5.0	---	17.0	20.0	21.0	---
2	---	---	---	.0	---	---	5.0	---	18.0	19.0	20.0	---
3	10.0	3.0	10.0	.0	---	.0	7.0	15.0	17.0	20.0	21.0	7.0
4	---	---	4.0	.0	---	---	7.0	---	18.0	18.0	20.0	17.0
5	12.0	4.0	4.0	---	---	---	---	---	19.0	19.0	18.0	---
6	---	---	2.0	---	.0	.0	---	13.0	18.0	21.0	19.0	---
7	---	---	1.0	.0	---	---	7.0	---	17.0	20.0	20.0	---
8	11.0	---	.0	---	.0	---	8.0	---	16.0	22.0	20.0	19.0
9	12.0	.0	---	---	---	---	9.0	---	15.0	21.0	19.0	---
10	14.0	---	---	.0	---	1.0	8.0	---	19.0	21.0	19.0	---
11	---	---	.0	.0	.0	2.0	7.0	---	20.0	19.0	17.0	---
12	11.0	1.0	.0	.0	---	2.0	---	7.0	19.0	22.0	19.0	---
13	9.0	2.0	.0	---	---	6.0	---	8.0	16.0	22.0	20.0	---
14	---	---	.0	.0	---	6.0	10.0	9.0	17.0	20.0	19.0	---
15	11.0	4.0	.0	.0	---	---	---	8.0	16.0	21.0	19.0	17.0
16	12.0	4.0	---	.0	---	---	13.0	7.0	16.0	19.0	17.0	14.0
17	---	5.0	.0	.0	---	4.0	---	8.0	17.0	22.0	17.0	16.0
18	---	5.0	.0	---	---	4.0	13.0	8.0	19.0	18.0	18.0	---
19	12.0	5.0	.0	---	.0	3.0	---	7.0	18.0	19.0	20.0	---
20	---	3.0	---	---	---	5.0	---	8.0	18.0	20.0	19.0	---
21	---	---	1.0	.0	.0	---	18.0	5.0	19.0	18.0	17.0	---
22	5.0	---	.0	---	.0	---	---	8.0	19.0	20.0	17.0	14.0
23	---	.0	---	---	---	---	---	---	20.0	21.0	20.0	15.0
24	---	1.0	.0	---	---	3.0	---	---	19.0	22.0	21.0	---
25	9.0	---	---	.0	.0	3.0	13.0	5.0	20.0	21.0	19.0	10.0
26	10.0	1.0	---	---	2.0	3.0	---	5.0	21.0	19.0	18.0	---
27	7.0	---	.0	---	---	---	---	5.0	20.0	19.0	15.0	---
28	---	.0	.0	.0	.0	---	---	8.0	18.0	21.0	18.0	---
29	8.0	---	.0	.0	.0	---	---	7.0	18.0	22.0	19.0	---
30	---	.0	---	.0	---	---	15.0	7.0	22.0	23.0	18.0	15.0
31	4.0	---	.0	.0	---	6.0	---	7.0	---	22.0	19.0	---
MEAN	10.0	2.5	1.0	.0	.0	3.0	9.5	8.0	18.0	20.5	19.0	14.5

06435000 BELLE FOURCHE RESERVOIR NEAR BELLE FOURCHE, SD

LOCATION.--Lat 44°44'12", long 103°40'27", in SW¼SE¼ sec.18, T.9 N., R.4 E., Butte County, Hydrologic Unit 10120202, at dam on Owl Creek, 9.8 mi (15.8 km) northeast of Belle Fourche.

PERIOD OF RECORD.--January 1912 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929, adjustment of 1912. Prior to June 6, 1967, nonrecording gage at present site and datum.

REMARKS.--Offstream reservoir formed by earthfill dam. Storage began in May 1910; dam completed in April 1911. Conservation capacity, 185,170 acre-ft (228 hm^3) 1949 survey, between elevations 2,927.0 ft (892.15 m), lowest outlet, and 2,975.0 ft (906.78 m), crest of spillway weir. Dead storage below elevation 2,927.0 ft (892.15 m) 6,800 acre-ft (8.38 hm^3). Figures given herein represent contents above elevation 2,927.0 ft (892.15 m). Water diverted from Belle Fourche River through Inlet Canal (see station 06434500) is stored in Belle Fourche Reservoir for irrigation.

COOPERATION.--Elevations and contents furnished by Water and Power Resources Service.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 197,400 acre-ft (243 hm^3) Apr. 30, 1919, May 20, 1920, elevation, 2,974.9 ft (906.75 m); minimum observed, -3,000 acre-ft (-3.70 hm^3) Sept. 30, 1936, water was lowered below dead storage level of 2,927.0 ft (892.15 m) by opening holes in crib walls.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 123,000 acre-ft (152 hm^3) May 7, elevation, 2,966.5 ft (904.19 m); minimum, 10,465 acre-ft (12.9 hm^3) Aug. 25, elevation, 2,936.3 ft (894.98 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation	Contents	Change in contents
Sept. 30	2952.4	49500	
Oct. 31	2954.1	56318	+6818
Nov. 30	2956.3	65635	+9317
Dec. 31	2958.5	75600	+9965
CAL YR 1979			-37711
Jan. 31	2960.2	85702	+10102
Feb. 29	2962.0	96000	+10298
Mar. 31	2964.2	108502	+12502
Apr. 30	2966.1	120360	+11858
May 31	2961.1	90780	-29580
June 30	2961.3	91940	+1160
July 31	2947.7	34030	-57910
Aug. 31	2938.6	14162	-19868
Sept. 30	2943.8	24270	+10108
WTR YR 1980			-25230

06436000 BELLE FOURCHE RIVER NEAR FRUITDALE, SD

'LOCATION.--Lat 44°41'27", long 103°44'14", in NW¼NE¼ sec.3, T.8 N., R.3 E., Butte County, Hydrologic Unit 10120202, on right bank 5 ft (2 m) downstream from bridge on U.S. Highway 212, 2.5 mi (4.0 km) northwest of Fruitdale and 8.8 mi (14.2 km) downstream from point of diversion to Belle Fourche Reservoir.

DRAINAGE AREA.--4,540 mi² (11,760 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for October 1945, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 2,925 ft (892 m), from topographic map. Prior to Apr. 9, 1947, nonrecording gage and Apr. 10, 1947, to Oct. 14, 1948, water-stage recorder, at site 100 ft (30 m) upstream at same datum. Oct. 15, 1948, to Dec. 30, 1958, water-stage recorder and Dec. 31, 1958, to Sept. 23, 1959, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Keyhole Reservoir since Feb. 12, 1952, usable capacity, 191,600 acre-ft (236 hm³), 180 mi (290 km) upstream. At a point 8.8 mi (14.2 km) above station, water is diverted to Belle Fourche Reservoir (see station 06435000) through Inlet Canal (see station 06434500), with other smaller diversions from the main stem and tributaries for irrigation. Total diversions for irrigation of about 60,000 acres (243 km²) above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--35 years, 88.3 ft³/s (2.501 m³/s), 63,970 acre-ft/yr (78.9 hm³/yr); median of yearly mean discharges, 54 ft³/s (1.53 m³/s), 39,100 acre-ft/yr (48 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,200 ft³/s (346 m³/s) June 15, 1976, gage height, 13.18 ft (4.017 m); no flow at times in 1945, 1948, 1959-62, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 634 ft³/s (18.0 m³/s) June 15, gage height, 4.75 ft (1.448 m); minimum daily, 0.81 ft³/s (0.023 m³/s) July 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	4.9	5.0	3.8	3.0	4.5	3.8	2.4	4.6	2.6	6.1	7.4
2	6.6	4.5	5.0	3.6	3.1	4.5	4.0	2.6	9.9	2.2	6.0	7.1
3	6.0	4.5	5.0	3.6	3.3	4.0	4.3	1.7	7.1	1.7	5.7	7.1
4	6.4	4.5	5.0	3.6	3.5	3.8	4.1	2.5	5.5	1.4	5.2	6.7
5	5.7	4.5	5.0	3.6	3.5	3.9	3.5	2.8	6.4	1.0	5.4	6.4
6	5.9	4.5	5.0	3.6	3.5	4.2	3.4	1.1	11	1.0	5.2	6.4
7	5.9	4.5	4.4	3.3	3.5	4.8	3.6	.91	12	1.5	4.1	6.1
8	5.8	4.5	4.4	3.0	3.5	5.6	3.6	1.8	6.9	1.8	4.0	6.1
9	6.1	4.5	4.3	2.8	3.7	6.4	3.6	1.9	5.8	2.5	4.0	6.1
10	6.2	4.5	4.1	2.6	3.9	5.8	3.6	2.3	5.5	2.3	3.7	6.1
11	6.4	4.5	3.8	2.6	3.9	5.6	3.4	3.2	5.0	1.3	4.2	6.1
12	5.3	4.7	4.0	2.8	3.9	4.7	4.0	3.2	4.7	1.4	4.5	5.8
13	5.2	4.7	4.2	2.8	3.7	4.6	4.0	2.4	4.5	1.3	4.6	6.1
14	5.2	4.7	4.3	3.0	3.5	4.4	3.5	2.5	5.6	1.5	3.9	5.6
15	5.2	4.7	4.2	3.0	3.4	4.5	3.1	3.0	187	1.3	3.9	5.3
16	5.0	4.7	3.5	3.0	3.2	4.7	3.1	3.3	15	.81	5.9	5.0
17	5.0	4.7	3.8	3.0	3.0	4.4	2.7	4.0	4.8	1.3	7.4	4.9
18	5.0	4.7	3.9	3.0	3.2	3.6	2.7	4.4	2.9	3.3	7.4	4.3
19	5.1	4.7	3.9	3.0	3.5	3.5	2.6	5.7	2.9	3.8	7.4	4.0
20	5.2	4.7	3.9	3.2	3.8	3.6	2.3	7.7	2.9	3.4	7.0	4.0
21	5.0	5.0	3.9	3.2	4.0	3.6	2.2	7.0	3.2	4.5	7.0	4.0
22	5.0	5.0	3.9	3.2	4.0	3.6	2.1	5.3	3.1	6.1	7.4	4.0
23	5.0	5.0	3.8	3.4	4.0	3.6	2.2	5.2	2.9	5.5	5.6	4.3
24	5.0	4.7	3.8	3.4	4.0	3.6	2.1	4.8	2.3	5.0	6.3	4.3
25	5.0	4.7	3.8	3.4	4.4	3.7	2.5	4.9	2.3	5.0	5.8	4.3
26	5.0	4.7	3.8	3.2	4.7	3.6	3.1	3.2	2.5	6.9	5.5	4.0
27	5.0	4.7	3.8	3.2	4.7	3.4	2.5	3.7	3.4	6.8	5.4	4.0
28	5.0	4.7	3.8	3.0	4.7	3.4	2.1	4.3	3.4	7.0	6.3	4.0
29	5.0	4.8	3.8	2.9	4.4	3.8	2.4	4.1	3.2	7.1	6.0	4.0
30	5.0	5.0	3.8	2.8	---	3.8	2.3	4.1	3.5	7.1	6.0	4.0
31	5.0	---	3.8	3.0	---	3.8	---	4.4	---	6.4	7.4	---
TOTAL	168.2	140.5	128.7	97.8	108.5	131.0	92.4	109.41	339.8	104.81	174.3	157.5
MEAN	5.43	4.68	4.15	3.15	3.74	4.23	3.08	3.53	11.3	3.38	5.62	5.25
MAX	6.6	5.0	5.0	3.8	4.7	6.4	4.3	7.7	187	7.1	7.4	7.4
MIN	5.0	4.5	3.5	2.6	3.0	3.4	2.1	.91	2.3	.81	3.7	4.0
AC-FT	334	279	255	194	215	260	183	217	674	208	346	312

CAL YR 1979 TOTAL 6455.70 MEAN 17.7 MAX 243 MIN 2.6 AC-FT 12800
WTR YR 1980 TOTAL 1752.92 MEAN 4.79 MAX 187 MIN .81 AC-FT 3480

06436700 INDIAN CREEK NEAR ARPAN, SD

LOCATION.--Lat 44°48'51", long 103°41'22", in SE¼NE¼ sec.24, T.10 N., R.3 E., Butte County, Hydrologic Unit 10120202, on left bank 3,200 ft (975 m) upstream from North Canal flume, 3.5 mi (5.6 km) northwest of Arpan and 6.9 mi (11.1 km) downstream from Bitter Creek.

DRAINAGE AREA.--315 mi² (815 km²), approximately.

PERIOD OF RECORD.--August 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,900 ft (880 m), from topographic map.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--19 years, 20.8 ft³/s (0.589 m³/s), 15,070 acre-ft/yr (18.6 hm³/yr); median of yearly mean discharges, 12 ft³/s (0.34 m³/s), 8,700 acre-ft/yr (11 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,700 ft³/s (473 m³/s) June 15, 1976, gage height, 18.00 ft (5.486 m), from floodmarks, from rating curve extended above 3,000 ft³/s (85.0 m³/s) on basis of slope-area measurement of peak flow; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 105 ft³/s (2.97 m³/s) Sept. 15, gage height, 5.50 ft (1.676 m), no peak above base of 350 ft³/s (9.91 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	1.4	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.7
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	56
16	.00	.00	.00	.00	.00	.00	.00	.00	42	.00	.00	22
17	.00	.00	.00	.00	.00	.00	.00	.00	14	.00	.00	4.7
18	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.90	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	59.50	.00	.00	84.40
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	1.98	.000	.000	2.81
MAX	.00	.00	.00	.00	.00	.00	.00	.00	42	.00	.00	56
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	118	.00	.00	167

CAL YR 1979 TOTAL 4140.38 MEAN 11.3 MAX 407 MIN .00 AC-FT 8210
WTR YR 1980 TOTAL 143.90 MEAN .39 MAX 56 MIN .00 AC-FT 285

06436800 HORSE CREEK NEAR VALE, SD

LOCATION.--Lat 44°39'30", long 103°20'17", in SE¼NW¼ sec.13, T.8 N., R.6 E., Butte County, Hydrologic Unit 10120202, on right bank 600 ft (183 m) downstream from Dry Creek, 2.9 mi (4.7 km) upstream from mouth and 4.0 mi (6.4 km) northeast of Vale.

DRAINAGE AREA.--530 mi² (1,370 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,688.96 ft (819.595 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are poor. Natural flow of stream affected by diversions for irrigation above station and by return flow from Belle Fourche Irrigation Project.

AVERAGE DISCHARGE.--18 years, 60.6 ft³/s (1.716 m³/s), 43,900 acre-ft/yr (54.1 hm³/yr); median of yearly mean discharges, 52 ft³/s (1.47 m³/s), 37,700 acre-ft/yr (46 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft³/s (329 m³/s) June 16, 1976, gage height, 14.61 ft (4.453 m), from floodmarks, from rating curve extended above 2,000 ft³/s (56.6 m³/s) on basis of slope-area measurement of peak flow; no flow Jan. 3-18, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 242 ft³/s (6.85 m³/s) June 1, gage height, 5.45 ft (1.661 m), no peak above base of 400 ft³/s (11.3 m³/s); minimum daily discharge, 0.93 ft³/s (0.026 m³/s) May 7, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	118	4.1	4.0	3.0	2.7	2.5	5.0	1.3	216	10	83	7.4
2	122	3.5	4.0	3.0	2.7	2.4	5.0	1.3	151	21	82	6.9
3	63	3.8	4.2	3.0	2.8	2.4	5.5	1.3	126	49	81	6.6
4	25	4.1	4.2	2.9	2.8	2.3	5.6	1.3	94	82	76	5.9
5	13	4.2	4.3	2.8	2.7	2.3	5.6	1.2	79	86	74	5.1
6	8.5	4.4	4.4	2.7	2.7	2.6	5.6	1.0	106	75	65	4.9
7	6.7	4.2	3.7	2.6	2.6	3.0	5.1	.93	124	65	72	4.6
8	5.7	4.4	3.2	2.5	2.6	3.3	4.7	.93	105	63	78	4.2
9	4.7	4.4	3.1	2.5	2.6	3.5	4.0	1.6	69	96	90	4.0
10	4.8	4.7	2.9	2.4	2.6	4.0	3.6	28	43	103	120	4.0
11	5.3	4.9	2.6	2.4	2.6	4.5	3.7	29	35	86	117	4.7
12	5.4	7.0	2.5	2.5	2.5	5.0	3.7	30	32	80	103	6.9
13	4.4	4.9	2.3	2.9	2.4	5.8	3.5	29	32	89	91	10
14	5.0	4.7	2.2	3.8	2.2	6.6	3.3	34	30	102	106	9.3
15	4.4	4.5	2.0	3.9	2.0	7.5	3.3	32	52	110	110	6.2
16	4.3	4.4	2.1	3.4	1.9	7.5	4.2	34	49	105	136	9.4
17	4.4	4.7	2.7	2.9	1.9	7.5	4.1	54	31	101	135	40
18	5.6	4.7	4.5	2.7	2.0	7.4	3.7	56	37	105	115	21
19	4.5	4.7	4.5	2.7	2.1	7.2	3.5	61	27	107	99	14
20	4.0	4.7	4.4	2.7	2.3	6.6	3.4	69	21	94	141	10
21	3.6	4.7	4.3	2.9	2.4	6.2	3.0	78	20	103	154	6.7
22	3.7	4.2	4.1	3.1	2.3	6.0	2.5	80	21	97	88	5.1
23	3.6	4.2	4.0	3.2	2.3	5.6	2.2	93	15	102	61	4.7
24	3.8	4.2	3.9	2.9	2.3	5.6	1.9	98	13	98	52	4.5
25	3.8	4.5	3.8	2.8	2.3	5.4	1.5	90	10	100	51	4.0
26	3.5	4.7	3.7	2.7	2.5	5.2	1.5	97	12	114	52	3.6
27	3.5	4.9	3.6	2.7	2.6	5.0	1.5	87	12	114	51	3.1
28	3.1	4.2	3.5	2.7	2.6	5.0	1.5	94	8.8	107	32	2.8
29	3.2	4.2	3.4	2.7	2.6	5.0	1.4	109	7.2	102	21	2.3
30	3.5	4.1	3.3	2.7	---	5.0	1.3	131	9.3	101	13	2.0
31	4.1	---	3.2	2.7	---	5.0	---	157	---	87	9.5	---
TOTAL	458.1	134.9	108.6	88.4	70.6	152.9	104.4	1580.86	1587.3	2754	2558.5	223.9
MEAN	14.8	4.50	3.50	2.85	2.43	4.93	3.48	51.0	52.9	88.8	82.5	7.46
MAX	122	7.0	4.5	3.9	2.8	7.5	5.6	157	216	114	154	40
MIN	3.1	3.5	2.0	2.4	1.9	2.3	1.3	.93	7.2	10	9.5	2.0
AC-FT	909	268	215	175	140	303	207	3140	3150	5460	5070	444

CAL YR 1979 TOTAL 19965.20 MEAN 54.7 MAX 291 MIN .00 AC-FT 39600
WTR YR 1980 TOTAL 9822.46 MEAN 26.8 MAX 216 MIN .93 AC-FT 19480

06436800 HORSE CREEK NEAR VALE, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to September 1969, October 1971 to September 1978.
WATER TEMPERATURES: October 1968 to September 1969, October 1971 to September 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 8,080 micromhos Feb. 1-3, 1969; minimum daily, 550 micromhos June 19, 1976.
WATER TEMPERATURES: Maximum daily, 33.0°C June 29, 1974, July 28, 1978; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT										
01...	1030	109	1870	8.4	14.0	820	680	200	78	110
NOV										
08...	1030	4.5	5800	8.1	2.0	2300	2000	380	340	720
DEC										
05...	1400	4.4	7300	8.3	.5	2400	2300	300	400	790
JAN										
03...	1015	3.0	6500	7.9	.0	2700	2400	440	400	820
FEB										
06...	1445	2.7	6200	7.8	.0	2500	2000	430	340	620
MAR										
05...	1320	2.3	6600	8.0	.0	2500	2100	370	390	890
APR										
07...	1515	5.3	6800	8.8	10.5	2300	2100	270	400	890
MAY										
05...	1345	1.3	7000	8.5	22.0	2300	2100	360	350	720
JUN										
05...	0955	78	1840	8.1	20.5	930	780	240	80	100
JUL										
07...	1100	66	2200	8.2	19.5	850	690	200	86	120
AUG										
04...	1445	76	2300	8.3	22.5	900	750	210	90	110
SEP										
02...	1515	6.8	6000	8.2	21.5	1400	1200	270	180	340

06436800 HORSE CREEK NEAR VALE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT 01...	22	1.7	8.2	120	140	910	15	.5	5.3
NOV 08...	40	6.5	14	730	340	3200	100	.4	4.5
DEC 05...	42	7.0	13	800	140	3700	130	.3	5.3
JAN 03...	39	6.8	14	830	310	3700	130	.4	6.6
FEB 06...	35	5.4	11	700	490	3100	110	.3	8.7
MAR 05...	43	7.7	14	900	410	3700	140	.3	9.4
APR 07...	45	8.0	14	900	270	3500	160	.4	1.8
MAY 05...	40	6.5	15	--	290	3400	130	.5	4.4
JUN 05...	19	1.4	8.6	--	150	930	17	.5	7.2
JUL 07...	23	1.8	10	--	160	890	16	.5	6.6
AUG 04...	21	1.6	10	--	150	990	19	.6	7.6
SEP 02...	34	3.9	11	--	250	1800	41	.5	3.0

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980 ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	6500	6510	6100	9300	---	6200	---		1980	---
2		---	6500	6510	5800	9200	---	---	1930		1980	---
3		---	6500	6600	5800	7200	6250	5820	1950		1980	---
4		---	6200	6600	5800	6750	---	5900	1900		1980	---
5		---	6200	6500	5800	6300	---	---	1980		1930	3400
6		---	6500	6900	5900	6300	6650	5880	---		2030	3530
7		---	7400	7000	5900	6350	---	5850	---		2060	3580
8		---	7700	---	5900	6200	6800	5850	---		2010	---
9		5900	7000	7000	5800	6800	6850	5850	---		2100	3700
10		5900	7000	6900	5800	7000	6200	4250	---		2130	3660
11		6000	7400	7200	5700	7000	6200	---	2060		2000	3700
12		6100	7500	7000	5600	7400	6200	---	2050		2070	3770
13		5800	7000	6500	5600	6700	6600	3840	1990		2030	3980
14		6100	7000	6200	5600	6700	6600	3790	---		2060	4040
15		6200	7000	6100	5600	---	6500	4140	2940		2040	4220
16		6000	7200	5900	5600	---	6500	4180	---		---	4300
17		6200	6800	6000	5600	---	7000	2480	---		1960	4380
18		6300	6500	6100	5600	---	7200	2450	---		1950	4290
19		---	6300	6700	5600	---	---	---	---		1980	3580
20		---	7000	6500	---	5480	7000	2180	---		2730	3360
21		6200	6800	6500	---	6800	7000	2060	2120		2130	3050
22		6400	6700	6300	5600	7300	7000	---	2180		2060	3160
23		6400	6500	6000	5800	6700	6950	---	2270		2090	3130
24		6400	6500	6200	5800	6700	7000	---	2320		2120	3390
25		6300	6400	7000	6500	6400	---	---	2180		2260	3400
26		6700	6200	5900	5700	6000	6800	2160	2270		2250	3570
27		7300	6200	---	5700	6000	6650	---	---		2260	3690
28		7000	6100	6100	8300	6300	6650	2110	---		---	3770
29		---	6400	6500	---	5900	---	---	4130		---	3730
30		6300	6400	6300	---	6200	6900	---	4080		---	3780
31		---	6500	6300	---	---	---	---	---		---	---
MEAN		6290	6710	6480	5870	6760	6700	4170	2400		2080	3690

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

06436800 HORSE CREEK NEAR VALE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT									
01...	1420	1.93	418	.79	.080	.010	.01	.03	--
NOV									
08...	5010	6.81	60.9	9.8	.020	.000	.01	.03	--
DEC									
05...	5470	7.44	65.0	10	.010	.020	.00	.00	--
JAN									
03...	5740	7.81	46.5	9.6	.020	.000	.00	.00	--
FEB									
06...	4920	6.69	35.9	1.8	.040	.010	.00	.00	--
MAR									
05...	5850	7.96	36.3	20	.090	.030	.02	.06	--
APR									
07...	5560	7.56	79.6	37	.100	.040	.00	.00	--
MAY									
05...	5160	7.02	18.1	.00	.060	.030	.01	.03	--
JUN									
05...	1480	2.01	312	1.2	.180	.030	.00	.00	--
JUL									
07...	1430	1.94	255	.40	.060	.000	.00	.00	--
AUG									
04...	1530	2.08	314	1.0	.100	.040	.04	.12	--
SEP									
02...	2800	3.81	51.4	1.2	.010	.010	.00	.00	--

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	1.0	.0	.0	.0	---	21.0	---		22.0	---
2		---	1.0	.0	.0	.0	---	---	22.0		22.0	---
3		---	1.0	.0	.0	.0	5.0	20.0	23.0		19.0	---
4		---	1.0	.0	.0	.0	---	19.0	24.0		16.0	---
5		---	1.0	.0	.0	.0	---	---	24.0		18.0	20.0
6		---	1.0	.0	.0	.0	7.0	23.0	---		20.0	20.0
7		---	1.0	.0	.0	.0	---	21.0	---		21.0	22.0
8		---	1.0	---	.5	.5	12.0	18.0	---		19.0	---
9		.0	2.0	.0	.0	.0	12.0	17.0	---		20.0	17.0
10		1.0	2.0	.0	.0	.0	11.0	15.0	---		18.0	18.0
11		2.0	.0	.0	.0	.0	10.0	---	25.0		19.0	20.0
12		3.0	.0	.0	.0	.5	9.0	---	26.0		20.0	15.0
13		4.0	1.0	.0	.0	1.0	12.0	16.0	27.0		19.0	15.0
14		4.0	1.0	.0	.0	1.0	12.0	17.0	---		19.0	16.0
15		4.0	.0	.0	.0	---	13.0	17.0	22.0		15.0	14.0
16		4.0	.0	.0	.0	---	13.0	16.0	---		---	14.0
17		4.0	.0	.0	.0	---	18.0	18.0	---		17.0	15.0
18		5.0	1.0	.0	.0	---	19.0	20.0	---		20.0	13.0
19		---	1.0	.0	.0	---	---	---	---		20.0	15.0
20		---	1.0	.0	---	4.0	21.0	22.0	---		15.0	15.0
21		2.0	1.0	.0	---	2.0	23.0	23.0	23.0		18.0	14.0
22		2.0	1.0	.0	.5	3.0	22.0	---	22.0		19.0	14.0
23		2.0	1.0	.0	.5	1.0	17.0	---	23.0		20.0	13.0
24		2.0	1.0	.0	.0	1.0	20.0	---	22.0		20.0	11.0
25		2.0	.0	.0	.5	2.0	---	---	25.0		18.0	13.0
26		2.0	.0	.0	.5	1.0	15.0	20.0	25.0		14.0	15.0
27		.5	.0	---	.0	5.0	19.0	---	---		17.0	14.0
28		1.0	.0	.0	.0	3.0	21.0	20.0	---		---	15.0
29		---	.0	.0	---	7.0	---	---	25.0		---	15.0
30		1.0	.0	.0	---	7.0	21.0	---	20.0		---	14.0
31		---	.0	.0	---	---	---	---	---		---	---
MEAN		2.5	.5	.0	.0	1.5	15.0	19.0	23.5		18.5	15.5

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD

LOCATION.--Lat 44°30'47", long 103°08'11", in SE¼NW¼ sec.3, T.6 N., R.8 E., Meade County, Hydrologic Unit 10120202, on right bank near upstream end of bridge on State Highway 34, 0.5 mi (0.8 km) upstream from Bear Butte Creek and 20 mi (32 km) northeast of Sturgis.

DRAINAGE AREA.--5,870 mi² (15,200 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,526.13 ft (769.964 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 31, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm³), 246 mi (396 km) upstream since February 1952. At a point 75 mi (121 km) above station, water is diverted to Belle Fourche Reservoir (see station 06435000), through Inlet Canal (see station 06434500), with other small diversions from the main stem and tributaries for irrigation. Total diversion for irrigation of about 60,000 acres (243 km²) above station.

AVERAGE DISCHARGE.--35 years, 272 ft³/s (7.703 m³/s), 197,100 acre-ft/yr (243 hm³/yr); median of yearly mean discharges, 228 ft³/s (6.46 m³/s), 165,000 acre-ft/yr (203 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,100 ft³/s (541 m³/s) June 15, 1976, gage height, 16.04 ft (4.889 m), from rating curve extended above 11,000 ft³/s (312 m³/s); no flow for many days in 1945, 1950, and Aug. 9, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,820 ft³/s (79.9 m³/s) June 14, gage height, 7.47 ft (2.277 m); minimum daily, 13 ft³/s (0.37 m³/s) Jan. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	355	73	54	30	15	27	54	44	482	85	167	61
2	394	65	56	30	15	29	53	42	452	105	153	59
3	273	65	58	29	16	31	53	42	353	140	152	57
4	164	64	60	28	16	35	53	40	308	150	172	53
5	101	64	64	26	17	37	53	38	244	166	154	50
6	87	65	64	24	17	40	53	39	268	182	140	47
7	78	65	64	22	18	43	53	39	321	177	130	41
8	73	62	64	19	20	46	50	35	321	160	116	36
9	72	59	66	19	20	50	48	39	268	215	122	35
10	71	73	64	19	21	54	48	39	209	237	148	34
11	70	74	60	18	22	60	49	88	177	235	171	35
12	69	67	56	18	20	65	51	105	160	230	158	39
13	70	64	56	19	20	70	47	111	145	246	143	44
14	71	63	56	20	19	75	45	84	541	303	161	49
15	69	63	56	20	19	80	45	76	643	369	185	45
16	69	58	54	20	20	75	49	77	578	386	240	41
17	68	58	52	20	21	75	59	97	463	364	277	40
18	68	57	50	20	22	72	61	102	234	341	277	51
19	70	56	50	20	23	72	58	104	174	365	218	40
20	68	55	48	20	25	68	56	124	160	413	212	37
21	67	52	45	22	27	64	57	131	128	456	294	35
22	67	44	44	22	27	60	55	132	118	435	268	32
23	68	40	40	24	26	58	57	137	116	413	203	31
24	69	43	37	24	26	58	55	164	101	281	181	29
25	68	45	35	20	26	56	53	175	90	172	188	28
26	68	50	35	19	27	54	52	173	85	222	177	27
27	65	48	35	18	28	54	51	201	90	253	162	28
28	65	44	33	15	29	54	50	234	81	239	127	29
29	65	48	32	13	28	54	46	219	70	212	88	29
30	65	50	32	15	---	54	44	250	80	196	74	29
31	66	---	30	15	---	53	---	293	---	177	69	---
TOTAL	3093	1734	1550	648	630	1723	1558	3474	7460	7925	5327	1191
MEAN	99.8	57.8	50.0	20.9	21.7	55.6	51.9	112	249	256	172	39.7
MAX	394	74	66	30	29	80	61	293	643	456	294	61
MIN	65	40	30	13	15	27	44	35	70	85	69	27
AC-FT	6130	3440	3070	1290	1250	3420	3090	6890	14800	15720	10570	2360

CAL YR 1979 TOTAL 73482.0 MEAN 201 MAX 932 MIN 2.0 AC-FT 145800
WTR YR 1980 TOTAL 36313.0 MEAN 99.2 MAX 643 MIN 13 AC-FT 72030

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954-58, 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 1954 to September 1958, October 1968 to September 1971, October 1973 to current year.
WATER TEMPERATURES: August 1954 to September 1958, October 1968 to September 1971, October 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,770 micromhos May 25, 1958; minimum daily, 650 micromhos Feb. 15, 1971.
WATER TEMPERATURES: Maximum daily, 30.0°C June 28, July 4, 7, 9, Aug. 7-10, 1970; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,900 micromhos Dec. 1, 17; minimum daily, 1,290 micromhos May 2.
WATER TEMPERATURES: Maximum daily, 23.5°C June 16; minimum daily, 0.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT 01...	1315	358	1970	8.6	16.0	820	660	200	77	92
NOV 08...	1430	66	2800	8.1	2.0	1100	840	300	78	180
DEC 06...	1030	64	3300	8.0	.5	1500	1200	340	150	210
JAN 03...	1400	29	3000	7.9	.0	1600	1300	350	180	220
FEB 07...	1200	18	2860	7.9	.0	1400	1100	300	160	200
MAR 05...	1530	37	2880	7.8	.0	1300	1100	270	160	230
APR 07...	1130	54	2900	8.5	10.0	1100	950	210	150	240
MAY 05...	1030	38	2050	8.6	16.5	790	640	160	95	140
JUN 05...	1250	242	1770	8.3	24.0	810	710	190	82	100
JUL 07...	1500	175	2120	8.3	24.0	850	720	190	90	130
AUG 04...	1200	185	2350	8.2	17.0	910	790	210	94	120
SEP 02...	1245	58	2750	8.1	20.5	1100	890	250	110	150

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT 01...	28	1.4	7.9	100	140	870	10	.5	4.9
NOV 08...	27	2.4	12	190	230	1100	26	.5	5.9
DEC 06...	35	2.4	12	220	280	1500	29	.5	6.3
JAN 03...	35	2.4	13	230	340	1600	33	.6	8.8
FEB 07...	36	2.3	12	210	330	1500	29	.5	9.3
MAR 05...	27	2.7	12	240	280	1500	39	.5	10
APR 07...	31	3.1	5.9	250	190	1300	37	.6	1.0
MAY 05...	27	2.2	11	--	150	860	25	.7	.9
JUN 05...	21	1.5	8.6	--	99	890	13	.5	6.8
JUL 07...	25	1.9	10	--	130	950	16	.6	5.3
AUG 04...	22	1.7	10	--	120	1000	16	.6	5.7
SEP 02...	23	2.0	11	--	190	1100	21	.5	3.8

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT 01...	1350	1.84	1310	.61	.050	.010	.01	.03	--
NOV 08...	1850	2.52	330	3.1	.010	.000	.01	.03	--
DEC 06...	2430	3.30	420	3.7	.010	.010	.00	.00	--
JAN 03...	2620	3.56	205	2.7	.030	.000	.01	.03	--
FEB 07...	2420	3.29	118	1.9	.020	.010	.01	.03	--
MAR 05...	2410	3.28	241	5.0	.010	.000	.00	.00	--
APR 07...	2090	2.84	305	6.1	.030	--	.00	.00	.02
MAY 05...	1390	1.89	143	1.1	.020	.020	.02	.06	--
JUN 05...	1360	1.85	889	1.1	.180	.020	.01	.03	--
JUL 07...	1470	2.00	695	.55	.060	.000	.00	.00	--
AUG 04...	1530	2.08	764	.71	.080	.060	.03	.09	--
SEP 02...	1760	2.39	276	.43	.070	.010	.00	.00	--

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
APR											
07...	1130	54	10	11	340	1	10	0	7	80	1

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
APR										
07...	10	0	.0	4	11	16	0	2400	.0	30

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1750	2550	3900	3200	3200	2490	2610	1330	1570	1970	1960	2280
2	1780	2500	3700	3100	3200	2410	2700	1290	1860	2440	1960	2250
3	1700	2550	3500	3050	3100	2580	2630	1300	1580	1920	1960	2300
4	1850	---	3400	3000	3100	2680	2700	1390	1670	1950	2010	2300
5	2000	2550	2300	2950	2800	2960	2750	1440	1710	1980	2030	2360
6	2120	2580	2850	3000	2750	2480	2710	1410	1710	2030	2020	2360
7	2150	2560	2700	3150	2850	2460	2670	1400	1700	1860	2040	2380
8	2250	2520	2750	3400	2900	2590	2730	1360	1830	1770	2060	2410
9	2300	2600	2850	3700	2700	2580	2770	1350	1890	1790	2090	2450
10	2320	2700	3100	3900	2700	2520	2700	1380	1780	1890	2070	2500
11	2300	2600	3000	3850	2750	2480	2560	1350	1790	1850	2070	2530
12	2320	2600	3350	3800	2600	2310	2560	3000	1840	1830	2100	2550
13	2320	2700	3250	3750	2450	2330	2520	1490	1830	1850	2060	2440
14	2350	2520	3350	3420	2500	2550	2470	1980	1750	1830	2060	2380
15	2350	2600	3500	3300	2450	2220	2440	1570	1520	1820	2080	2360
16	2350	2580	3750	3250	2550	2340	2430	2030	1750	1850	2040	2400
17	2350	2650	3900	3420	2600	2370	2480	2200	1890	1780	2010	2470
18	2400	2620	3650	3500	2550	2460	2430	2150	1760	1830	1980	2410
19	2400	2650	3300	3480	2400	2460	2130	1790	1850	1840	1980	2900
20	2450	2650	3300	3550	2450	2500	2030	1820	1900	1830	1970	3030
21	2400	2700	3400	3500	2550	2490	2110	1750	1760	1830	2050	2840
22	2420	2800	3350	3200	2550	2370	2050	1560	1920	1830	2070	2550
23	2500	2920	3150	3050	2450	2160	1840	1630	1900	1870	2010	2520
24	2500	2880	3050	2650	2100	2500	1650	1630	1930	1900	1960	2430
25	2500	2800	2900	2600	2150	2350	1580	1590	1980	1910	1990	2410
26	2500	2950	3000	2750	2200	2380	1540	1620	2030	1920	2040	2410
27	2550	2800	2950	3000	2050	2200	1480	1620	2090	1870	2050	2420
28	2600	3150	3000	3100	2050	2440	1540	1530	1990	1820	2170	2460
29	2630	3350	3000	3200	2200	2450	1660	1550	1910	1860	2250	2460
30	2650	---	3000	3250	---	2550	1650	1500	1980	1870	2300	2480
31	---	---	3100	3400	---	2670	---	1530	---	1920	2370	---
MEAN	2300	2700	3200	3270	2580	2460	2270	1630	1820	1890	2060	2470

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.5	.5	.0	.0	.0	.0	3.0	14.0	13.5	21.0	22.0	14.0
2	12.0	1.0	.0	.0	.0	.0	3.5	14.0	14.5	19.0	21.0	15.0
3	10.5	.0	.0	.0	.0	.0	8.0	15.0	18.0	22.0	22.0	17.0
4	7.5	---	.0	.0	.0	.0	4.0	14.5	20.0	21.5	15.0	13.0
5	11.5	2.0	.0	.0	.0	.0	6.5	15.5	20.5	22.0	15.5	16.0
6	9.5	2.0	1.0	.0	.0	.0	8.0	14.0	19.5	21.0	19.0	17.5
7	11.0	.0	1.0	.0	.0	.0	5.5	11.0	17.0	22.0	21.0	19.0
8	11.0	.0	.0	.0	.0	.0	4.0	10.0	16.0	22.0	20.5	18.0
9	7.0	.0	.5	.0	.0	.0	4.0	12.0	16.5	21.0	18.0	12.0
10	8.0	.0	1.0	.0	.0	.0	7.0	12.0	19.5	23.5	20.5	13.5
11	11.0	.0	.0	.0	.0	.0	5.0	10.5	19.0	22.0	18.0	17.5
12	11.0	.5	.0	.0	.0	.0	5.5	13.0	20.0	22.0	20.0	18.0
13	11.0	.0	.0	.0	.0	.0	6.0	10.0	20.5	21.0	20.0	14.0
14	11.0	3.5	.0	.0	.0	.0	8.0	11.5	22.0	21.0	20.0	15.0
15	9.5	.5	.0	.0	.0	.0	10.0	13.0	17.5	21.5	19.0	16.0
16	12.5	.0	.0	.0	.0	.0	9.0	14.5	23.0	20.5	18.0	11.0
17	8.5	.0	.0	.0	.0	.0	8.0	14.0	19.0	22.0	16.5	16.5
18	10.0	6.5	.0	.0	.0	.5	12.5	14.0	20.0	20.0	19.0	15.5
19	9.5	.5	.0	.0	.0	.0	14.0	16.0	19.0	21.0	19.0	13.0
20	10.0	1.0	.0	.0	.0	.0	22.5	16.0	18.0	21.0	19.0	14.5
21	8.0	.0	.0	.0	.0	.5	16.5	19.0	22.0	18.5	17.0	14.0
22	3.5	.0	.0	.0	.0	.5	16.0	19.0	20.0	20.0	18.5	17.5
23	4.0	1.5	.0	---	.0	.5	12.0	17.0	22.5	22.0	19.5	11.0
24	7.0	1.0	.0	.0	.0	.0	11.0	18.5	19.5	23.5	20.0	10.0
25	8.0	.5	.0	.0	.0	.0	11.5	18.0	22.0	21.0	20.5	8.0
26	8.5	.5	.0	.0	.0	.0	13.5	15.5	22.5	20.0	17.0	19.0
27	12.0	.0	.0	.0	.0	2.0	12.0	16.5	22.0	22.0	14.5	17.0
28	5.0	.0	.0	.0	.0	.5	12.0	18.0	17.0	21.5	17.5	21.5
29	7.0	.0	.0	.0	.0	.5	13.0	17.0	17.0	22.0	24.0	19.0
30	4.0	---	.0	.0	---	1.0	13.0	16.0	20.0	22.5	18.0	12.0
31	---	---	.0	.0	---	2.5	---	15.5	---	21.5	17.0	---
MEAN	9.0	1.0	.0	.0	.0	.5	9.5	14.5	19.5	21.5	19.0	15.0

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD

LOCATION.--Lat 44°22'11", long 102°33'56", in NE¼NE¼ sec.29, T.5 N., R.13 E., Meade County, Hydrologic Unit 10120202, on right bank 10 ft (3 m) downstream from highway bridge, 4.3 mi (6.9 km) northwest of Elm Springs and 4.7 mi (7.6 km) downstream from Hay Creek.

DRAINAGE AREA.--7,210 mi^2 (18,670 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to June 1932, March 1934 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 786: Drainage area. WSP 926: 1929, 1931(M), 1935, 1937.

GAGE.--Water-stage recorder. Datum of gage is 2,171.60 ft (661.904 m) National Geodetic Vertical Datum of 1929. Prior to July 27, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good except those over 1,000 ft^3/s (28.3 m^3/s), which are fair and those for winter periods, which are poor. Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm^3), 304 mi (489 km) upstream since February 12, 1952. At a point 133 mi (214 km) above station, water is diverted to Belle Fourche Reservoir (see station 06435000), through Inlet Canal near Belle Fourche (see station 06434500), with other smaller diversions from the main stem and tributaries for irrigation. Total diversion for irrigation of about 60,000 acres (243 km^2) above station.

AVERAGE DISCHARGE.--49 years (water years 1929-31, 1935-80), 362 ft^3/s (10.3 m^3/s), 262,300 acre-ft/yr (323 hm^3/yr); median of yearly mean discharges, 360 ft^3/s (10 m^3/s), 261,000 acre-ft/yr (322 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,100 ft^3/s (1,280 m^3/s) June 8, 1964, gage height, 15.90 ft (4.846 m), from rating curve extended above 23,000 ft^3/s (651 m^3/s); no flow for many days in 1936-37, 1939-40, 1961-62.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1927 reached a stage of 21.8 ft (6.64 m). Flood in spring of 1933 reached a stage of about 20 ft (6.1 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,200 ft^3/s (289 m^3/s) June 15, gage height, 7.98 ft (2.432 m); minimum daily, 8.5 ft^3/s (0.24 m^3/s) Jan. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	337	106	42	17	11	26	103	36	312	52	176	63
2	364	103	44	16	12	28	92	35	438	68	163	57
3	392	103	50	16	14	30	92	34	378	156	156	55
4	308	103	57	16	16	32	87	29	329	154	156	54
5	225	98	63	16	18	30	78	26	299	147	156	52
6	176	92	59	14	18	32	74	26	283	160	156	48
7	153	85	59	12	18	36	72	22	312	179	147	44
8	141	85	59	10	20	40	68	24	470	186	144	40
9	132	66	64	9.0	20	45	66	24	364	189	141	36
10	123	54	57	10	21	50	68	18	329	309	141	31
11	118	49	42	9.5	22	55	74	20	303	279	153	30
12	115	52	43	9.5	20	60	68	39	271	244	166	66
13	118	50	50	9.5	20	60	61	89	259	221	166	96
14	118	50	50	10	18	70	61	106	377	214	153	63
15	118	49	50	10	17	80	57	94	4260	232	160	63
16	118	43	52	10	17	85	59	74	1630	263	179	70
17	118	43	44	10	18	86	52	72	277	247	203	66
18	118	38	39	9.8	20	85	50	85	124	228	214	61
19	115	40	35	9.6	22	80	63	103	68	221	203	61
20	113	40	30	10	24	80	59	106	54	221	182	66
21	113	38	28	11	26	85	52	123	57	232	141	59
22	110	26	26	12	26	90	52	141	61	236	115	57
23	110	24	24	13	25	95	63	132	55	228	126	55
24	108	36	22	13	24	95	54	135	52	221	141	52
25	108	39	20	11	23	90	54	163	50	221	141	50
26	110	46	20	10	25	90	54	176	46	221	132	49
27	110	40	20	9.0	27	100	49	176	44	225	120	49
28	110	24	20	8.5	28	110	46	200	42	217	120	48
29	108	39	19	9.0	27	110	42	225	48	214	103	46
30	108	39	18	9.5	---	105	42	217	49	203	83	46
31	108	---	17	10	---	105	---	263	---	189	72	---
TOTAL	4723	1700	1223	349.9	597	2165	1912	3015	11641	6377	4609	1633
MEAN	152	56.7	39.5	11.3	20.6	69.8	63.7	97.3	388	206	149	54.4
MAX	392	106	64	17	28	110	103	263	4260	309	214	96
MIN	108	24	17	8.5	11	26	42	18	42	52	72	30
AC-FT	9370	3370	2430	694	1180	4290	3790	5980	23090	12650	9140	3240

CAL YR 1979 TOTAL 83679.0 MEAN 229 MAX 886 MIN 2.5 AC-FT 166000
WTR YR 1980 TOTAL 39944.9 MEAN 109 MAX 4260 MIN 8.5 AC-FT 79230

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,000 micromhos Jan. 31, Feb. 7-11; minimum daily, 800 micromhos June 19, 1976.
WATER TEMPERATURES: Maximum daily, 33.5°C June 25, 1977; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,400 micromhos Jan. 5, 10; minimum daily, 945 micromhos June 16.
WATER TEMPERATURES: Maximum daily, 27.0°C June 12; minimum daily, 0.0°C Nov. 9-11.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
02...	1000	361	2020	8.3	14.0	--	9.5	110	140	--	--	--
NOV												
13...	1000	43	2900	8.8	1.0	1.4	13.0	--	--	1200	1000	230
DEC												
10...	1100	61	3280	8.2	.0	1.9	13.0	K2	K6	1400	1100	290
JAN												
14...	1145	10	4500	8.1	.0	.60	10.7	25	K8	2000	1700	420
FEB												
11...	1045	22	3320	7.2	.0	.70	12.4	K2	K5	1400	1100	290
MAR												
17...	1150	86	1710	8.1	1.0	4.0	12.6	ND	K3	720	580	160
APR												
15...	0930	55	2980	8.1	11.5	3.5	10.6	K1	50	1200	1000	230
MAY												
12...	1200	23	2220	8.3	14.0	4.4	9.9	60	220	840	700	170
JUN												
09...	1210	362	1870	7.9	20.5	820	8.4	1330	1130	860	720	210
JUL												
10...	1415	332	2010	7.7	24.0	--	7.1	6600	1370	610	--	160
AUG												
04...	1145	156	2450	8.3	17.5	37	8.8	22	29	980	850	230
SEP												
09...	1040	36	2660	7.9	13.0	7.4	9.8	20	K9	1100	1000	240

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM+POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT												
02...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
13...	160	200	26	2.5	12	210	200	1400	30	.4	4.9	2380
DEC												
10...	160	220	26	2.6	10	230	240	1500	25	.5	5.3	2560
JAN												
14...	230	350	27	3.4	16	370	300	2300	46	.7	8.8	3790
FEB												
11...	160	230	26	2.7	11	240	320	1500	32	.5	6.5	2710
MAR												
17...	79	130	26	2.1	7.3	--	140	780	18	.4	3.6	1390
APR												
15...	150	260	32	3.3	12	270	160	1400	38	.3	.1	2340
MAY												
12...	100	190	33	2.9	12	--	140	1000	28	.4	.9	1810
JUN												
09...	82	130	24	1.9	11	--	140	890	18	.6	6.6	1560
JUL												
10...	50	200	41	3.5	11	--	--	--	--	--	--	--
AUG												
04...	98	130	22	1.8	13	--	130	1100	8.6	.5	2.8	1810
SEP												
09...	130	190	26	2.5	13	--	120	1400	24	.6	2.7	2290

K Non-ideal colony count.
ND Not detected.

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 02...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 13...	2170	3.24	276	--	2.6	2.6	.15	.19	.13	.16	.73	.79
DEC 10...	2370	3.48	424	--	2.8	2.9	.13	.17	.16	.19	.64	.62
JAN 14...	3570	5.15	102	--	3.2	3.2	.69	.89	.88	1.1	.91	.00
FEB 11...	2430	3.69	160	--	1.3	1.3	.55	.71	.56	.68	.34	.43
MAR 17...	1270	1.89	321	--	2.5	2.5	.70	.90	.69	.83	.60	1.1
APR 15...	2210	3.18	349	--	4.2	4.3	.03	.04	.03	.00	1.4	2.2
MAY 12...	1590	2.46	112	--	.28	.25	.04	.05	.06	.07	.49	.64
JUN 09...	1440	2.12	1530	--	2.8	2.8	.01	.01	.06	.07	.47	3.4
JUL 10...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 04...	1660	2.46	762	--	.23	.28	.03	.04	.05	.06	.79	1.2
SEP 09...	2070	3.11	223	--	.03	.03	.06	.08	.06	.07	.38	.77

DATE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, ORTHOPHOSPHATE TOTAL (MG/L AS P) (70507)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P) (00673)	PHOSPHORUS, HYDRO. + ORTHO DISSOL. (MG/L AS P) (00677)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)
OCT 02...	--	--	--	--	--	--	--	--	--	--	--
NOV 13...	.88	.04	.92	3.5	3.5	16	--	--	--	.000	.010
DEC 10...	.77	.01	.78	3.6	3.7	16	--	--	--	.010	.010
JAN 14...	1.6	.00	.23	4.8	3.4	15	--	--	--	.010	.010
FEB 11...	.89	.10	.99	2.2	2.3	10	--	--	--	.000	.000
MAR 17...	1.3	.50	1.8	3.8	4.3	19	--	--	--	.050	.020
APR 15...	1.4	.80	2.2	5.6	6.5	29	--	--	--	.020	.010
MAY 12...	.53	.17	.70	.81	.95	4.2	--	--	--	.010	.030
JUN 09...	.48	3.0	3.5	3.3	6.3	28	--	--	--	.020	.750
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 04...	.82	.38	1.2	1.1	1.5	6.6	--	--	--	.030	.070
SEP 09...	.44	.39	.83	.47	.86	3.8	--	--	--	.000	.040

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, ORTHOPHOSPHATE TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)
OCT 02...	--	--	46	.9	--	--	--	--	--	--	--
NOV 13...	.03	--	--	--	3.6	--	--	--	--	--	--
DEC 10...	.03	--	--	--	8.0	--	--	--	--	--	--
JAN 14...	.03	--	64	.4	--	--	--	--	--	--	--
FEB 11...	.00	--	--	--	5.2	--	--	--	--	--	--
MAR 17...	.06	--	--	--	2.3	--	--	--	--	--	--
APR 15...	.03	--	53	--	--	3300	93.1	87.7	7.45	.000	725
MAY 12...	.09	--	--	--	14	15000	--	--	--	--	--
JUN 09...	2.3	--	--	--	23	25000	--	--	--	--	--
JUL 10...	--	--	460	1.2	--	--	2.60	1.97	.070	.000	9000
AUG 04...	.21	--	--	--	8.9	54000	--	--	--	--	--
SEP 09...	.12	--	--	--	6.1	160000	--	--	--	--	--

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT 02...	1000	361	129	126	92	--	--	--	--	--	--	--
NOV 13...	1000	43	223	26	97	--	--	--	100	--	--	--
DEC 10...	1100	61	208	34	93	--	--	--	97	100	--	--
JAN 14...	1145	10	212	5.7	51	--	--	--	57	74	100	--
FEB 11...	1045	22	174	10	90	--	--	--	92	97	100	--
MAR 17...	1150	86	126	29	94	--	--	--	97	100	--	--
APR 15...	0930	55	231	34	97	--	--	--	--	--	--	--
MAY 12...	1200	23	159	9.8	95	--	--	--	100	--	--	--
JUN 09...	1210	362	2110	2060	--	71	81	94	98	100	--	--
JUL 10...	1415	332	38300	32300	--	69	82	98	100	--	--	--
AUG 04...	1145	156	157	66	80	--	--	--	--	--	--	--
SEP 09...	1040	36	258	25	85	--	--	--	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT 02...	1000	16	0	16	0	0	0	10	10	0	0
JAN 14...	1145	13	3	10	0	0	0	0	0	0	3
APR 15...	0930	11	1	10	0	0	0	0	0	0	0
JUL 10...	1415	--	--	3	3	3	0	470	460	10	200

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
OCT											
02...	0	0	2	0	2	2200	10	2	2	0	110
JAN											
14...	3	0	3	1	2	120	40	4	4	0	1000
APR											
15...	0	0	2	0	2	180	30	1	1	0	130
JUL											
10...	200	1	500	490	10	460000	20	290	290	2	6200

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT											
02...	90	20	.0	.0	.0	4	1	3	10	0	10
JAN											
14...	210	790	.4	.4	.0	9	1	8	10	0	10
APR											
15...	50	80	.0	.0	.0	12	0	12	10	0	10
JUL											
10...	6200	10	--	--	.0	--	--	6	2400	2400	10

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	SEP 6,79		APR 15,80		MAY 12,80		JUN 9,80		AUG 4,80		SEP 9,80	
TIME	0815		0930		1200		1210		1145		1040	
TOTAL CELLS/ML	18000		3300		15000		25000		54000		160000	
DIVERSITY: DIVISION	1.6		1.2		0.4		0.8		1.4		0.4	
.CLASS	1.6		1.2		0.4		0.8		1.4		0.4	
..ORDER	0.0		1.6		0.4		1.6		1.4		0.4	
...FAMILY	0.0		2.5		0.4		1.6		2.1		1.0	
....GENUS	0.0		2.6		0.4		2.4		2.8		1.1	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	210	1	*	0	--	-
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	*	0	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	--	-	--	-	--	-	300	1	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	2600	14	150	5	--	-	840	3	2600	5	3200	2
....CHLORELLA	--	-	62	2	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	*	0
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	2100	4	3500	2
....KIRCHNERIELLA	--	-	--	-	--	-	210	1	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	460	1	*	0
....SELENASTRUM	--	-	--	-	--	-	--	-	*	0	*	0
....TREUBARIA	--	-	--	-	--	-	--	-	*	0	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	4900	9	--	-
....SCENEDESMUS	5300#	30	--	-	490	3	420	2	1600	3	1600	1
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	160	1	120	4	--	-	630	3	610	1	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	4900#	27	250	7	*	0	14000#	56	4700	9	--	-
....MELOSIRA	--	-	--	-	--	-	1700	7	300	1	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	62	2	--	-	1300	5	300	1	*	0
...CYMBELLACEAE												
....AMPHORA	--	-	--	-	--	-	210	1	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	830#	25	--	-	--	-	--	-	--	-
....OPEPHORA	*	0	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	*	0	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	240	1	93	3	250	2	1500	6	460	1	*	0
....PLAGIOTROPIS	--	-	62	2	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	550	3	1000#	31	*	0	2100	8	4100	8	*	0
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	210	1	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE	160	1	--	-	--	-	--	-	--	-	--	-
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	2000	11	--	-	14000#	94	--	-	6900	13	27000#	17
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENOPSIS	--	-	--	-	--	-	--	-	23000#	44	120000#	77
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	1700	7	--	-	--	-
....SCHIZOTHRIX	1900	10	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....TRACHELOMONAS	*	0	650#	19	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1800	2640	3700	3250	3300	2310	2320	1770	1810	2450	1930	2150
2	1830	2700	3700	3300	3300	2310	3500	1770	1870	2480	2020	2190
3	1800	2700	3730	3300	3350	2330	2210	1810	1900	1500	2010	2200
4	1800	2600	3470	3250	3400	2540	2370	1840	1850	1150	2000	2380
5	1800	2700	3510	4400	3500	2570	2330	1930	1800	1160	2030	2380
6	1850	2700	3500	4300	3150	2600	2600	1920	1800	2120	2030	2380
7	1950	2700	3100	4200	3100	2600	2750	1940	1750	2190	2080	---
8	2150	2670	3120	4300	3100	2770	2720	1990	1750	2190	2020	---
9	2130	2830	3100	4200	3150	2940	2780	2000	1880	2070	2030	2520
10	2230	2900	4040	4400	3050	2330	2610	2030	1870	1960	2050	2520
11	2300	2600	4120	4000	3100	2310	2660	2030	1970	1930	2100	2540
12	2350	2700	4150	4100	3150	2350	2650	2070	1920	2020	2100	2280
13	2350	2800	4100	4050	3050	2350	2720	1930	1920	1970	2100	2280
14	2400	2800	4200	4250	3150	2350	2740	2850	1950	1970	2020	1380
15	2400	2800	4200	4100	2900	2050	2650	2320	1260	1950	2010	1440
16	2350	2720	4150	3900	2900	1780	2650	1970	985	1930	1990	2040
17	2370	2680	4150	3900	2850	1790	2630	2080	950	1920	2020	2520
18	2370	2800	4050	3900	2850	1860	2630	1950	1730	1920	1980	2480
19	2370	2800	4050	4200	2850	1870	2610	2280	1750	1900	2010	2490
20	2400	2800	4100	4100	2750	1960	2680	2640	1740	1970	2010	2420
21	2380	2800	4050	4100	2700	1960	2700	2580	1800	1990	2010	2560
22	2380	3050	4100	4000	2700	2070	2650	2330	1800	1940	1980	2540
23	2450	3100	3570	4000	2750	2230	2510	2170	1880	1940	2000	2550
24	2450	3000	3600	4000	2600	2330	2310	2170	1880	1940	2000	2630
25	2500	3700	3650	4000	2650	2410	2320	2080	2000	1980	1950	3000
26	2500	3750	3550	4000	2150	2390	2350	2080	2110	1980	1930	3000
27	2550	3800	3520	4000	2200	2400	2230	2060	2090	1990	1960	2770
28	2600	3750	3520	4000	2150	2400	2120	1980	2150	1970	1980	2780
29	2600	3800	3520	4000	2200	2280	1980	2020	2230	1970	2040	2720
30	2550	3900	3410	4000	---	2400	1990	1850	2260	1970	2030	2700
31	2600	---	3390	4000	---	2420	---	1850	---	1970	2080	---
MEAN	2280	2980	3750	3980	2900	2300	2530	2070	1820	1950	2020	2420

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	3.0	1.0	1.0	.5	.5	7.0	20.0	17.0	21.0	24.0	16.0
2	13.0	3.5	1.0	1.0	.5	.5	7.0	20.0	17.0	20.0	25.0	16.0
3	12.0	8.0	1.5	1.0	1.0	.5	5.5	20.0	18.0	22.0	24.0	17.5
4	9.5	4.0	1.0	1.0	1.0	.5	7.0	17.0	21.0	23.0	15.0	17.0
5	10.0	3.5	1.0	.5	1.0	.5	8.0	16.0	25.0	21.0	16.0	18.0
6	19.0	2.0	1.0	.5	1.0	.5	8.0	16.0	23.0	25.0	20.0	19.0
7	20.0	2.0	1.0	.5	1.0	.5	8.0	14.0	19.0	24.0	21.0	---
8	9.5	3.0	1.0	.5	1.0	.5	8.0	12.0	17.0	22.5	24.0	---
9	8.0	.0	1.0	.5	.5	.5	5.0	11.0	20.0	22.0	26.0	18.0
10	8.5	.0	1.0	.5	.5	.5	8.0	---	21.0	27.0	22.0	15.0
11	14.0	.0	1.0	1.0	.5	1.0	9.5	---	21.5	22.0	22.0	25.0
12	12.0	1.0	1.0	1.0	.5	.5	7.5	---	27.0	25.0	22.5	20.0
13	14.0	1.0	1.0	.5	.5	.5	11.0	11.5	26.5	26.0	22.0	18.0
14	16.5	1.0	1.0	.5	.5	.5	8.5	14.0	22.0	27.0	21.0	18.0
15	17.0	1.5	1.0	1.0	.5	.5	9.0	18.0	13.0	21.0	21.0	17.0
16	14.0	2.0	.5	1.0	.5	.5	10.0	18.0	17.0	24.0	20.0	14.0
17	10.0	2.0	.5	1.0	.5	1.0	13.0	15.0	17.5	25.0	20.0	16.0
18	13.0	1.0	.5	1.0	.5	1.0	15.0	15.0	25.0	23.0	21.0	15.0
19	15.0	1.0	1.0	.5	.5	1.0	18.0	15.5	19.5	22.0	20.0	17.0
20	11.0	1.0	1.0	.5	.5	1.0	18.0	19.0	20.0	21.0	19.0	14.0
21	9.5	2.0	1.0	.5	.5	1.0	15.0	19.5	21.0	20.0	20.0	13.0
22	6.5	2.0	1.0	.5	.5	1.0	17.0	20.0	22.0	21.0	21.0	12.5
23	7.0	1.0	1.0	.5	.5	.5	19.0	21.0	21.0	22.0	18.0	13.0
24	8.5	1.0	1.0	.5	.5	1.5	12.0	20.5	21.5	25.0	20.0	10.0
25	7.0	1.5	1.0	.5	.5	3.5	10.0	20.0	24.0	21.0	20.0	9.5
26	10.5	1.0	1.0	.5	1.0	3.0	13.5	16.5	24.0	23.0	21.0	11.0
27	10.0	1.0	1.0	.5	.5	4.5	15.0	18.0	23.0	26.0	20.0	9.5
28	10.5	1.0	1.0	.5	.5	5.0	14.0	22.5	23.0	23.0	18.5	14.0
29	7.0	.5	1.0	.5	.5	5.0	22.0	21.0	18.0	24.0	19.0	14.0
30	6.0	1.0	1.0	.5	---	6.0	14.0	18.0	22.0	23.0	20.0	12.5
31	3.0	---	1.0	.5	---	6.5	---	17.0	---	24.5	20.0	---
MEAN	11.0	2.0	1.0	.5	.5	1.5	11.5	17.5	21.0	23.0	20.5	15.5

06438500 CHEYENNE RIVER NEAR PLAINVIEW, SD

LOCATION.--Lat 44°31'16", long 101°59'34", in NE¼SW¼ sec.31, T.7 N., R.18 E., Ziebach County, Hydrologic Unit 10120112, near left bank on downstream side of highway bridge, 1.0 mi (1.6 km) downstream from Ash Creek and 10 mi (16 km) southeast of Plainview.

DRAINAGE AREA.--21,600 mi² (55,900 km²), approximately.

PERIOD OF RECORD.--October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,877.65 ft (572.308 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 22, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow slightly regulated by Angostura Reservoir 164 mi (264 km) upstream (see station 06401000) since October 1949 and upstream reservoirs on Rapid Creek since 1956 and Belle Fourche River since 1952. Flow also affected by diversions for irrigation of about 70,000 acres (283 km²) and return flow from irrigated areas. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--30 years, 621 ft³/s (17.59 m³/s), 449,900 acre-ft/yr (555 hm³/yr); median of yearly mean discharges, 590 ft³/s (16.7 m³/s), 427,000 acre-ft/yr (530 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,700 ft³/s (1,180 m³/s) May 26, 1957, from rating curve extended above 18,000 ft³/s (510 m³/s); maximum gage height, 11.68 ft (3.560 m) May 26, 1965; no flow Dec. 14, 19-21, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood late in May 1920 reached a stage of about 17.5 ft (5.33 m), and flood in May 1927 reached a stage of about 14 ft (4.3 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,940 ft³/s (225 m³/s) June 15, gage height, 7.65 ft (2.332 m); minimum daily, 25 ft³/s (0.71 m³/s) Jan. 10, 29-31.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 16 to Nov. 25, June 2-15, July 29 to Aug. 29; stage-discharge relation affected by ice Nov. 26-28, Nov. 30 to Mar. 23)

3.2	41	4.0	230	5.5	1,510
3.4	68	4.5	485	6.0	2,390
3.7	131	5.0	910	7.0	5,200

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	341	341	130	60	27	120	405	156	505	49	203	159
2	366	238	150	60	30	200	422	156	840	49	179	162
3	377	207	200	55	40	350	454	142	707	52	169	200
4	394	189	230	55	60	370	540	131	554	142	156	196
5	312	185	250	50	100	370	791	84	460	166	148	159
6	250	182	240	45	130	350	336	88	472	156	151	145
7	211	182	230	40	140	350	289	90	499	131	148	129
8	192	182	220	35	140	360	336	90	446	139	139	121
9	176	200	200	30	130	400	331	92	479	137	134	109
10	162	211	180	25	130	420	316	105	400	134	134	101
11	162	196	150	27	130	420	307	103	350	207	362	92
12	159	200	140	27	125	420	312	105	300	200	316	133
13	162	215	130	30	125	450	577	124	250	162	271	156
14	166	207	110	30	125	500	336	245	192	182	259	162
15	172	211	100	30	120	550	276	316	2690	145	234	124
16	166	203	90	29	120	550	267	250	5130	156	664	121
17	162	196	100	28	120	520	246	200	2330	159	1250	126
18	162	192	115	28	130	520	234	179	1440	192	472	131
19	159	189	130	27	140	500	222	185	584	192	394	129
20	153	185	120	27	150	500	222	192	734	162	341	134
21	156	185	110	28	150	550	215	175	454	200	302	137
22	162	172	110	29	140	600	196	189	271	211	271	131
23	166	159	100	30	140	500	179	189	250	246	321	129
24	196	169	95	30	140	394	172	179	207	226	284	126
25	172	162	90	29	140	341	169	166	172	211	250	129
26	169	160	85	28	140	316	192	182	153	196	238	126
27	166	150	80	27	135	269	207	200	145	200	230	119
28	162	140	75	27	130	263	200	277	110	234	219	117
29	169	129	70	25	130	269	189	219	75	246	207	112
30	185	125	65	25	---	506	169	238	53	238	189	107
31	946	---	65	25	---	592	---	250	---	226	169	---
TOTAL	7053	5662	4160	1041	3457	12860	9107	5297	21252	5346	8804	4022
MEAN	228	189	134	33.6	119	415	304	171	708	172	284	134
MAX	946	341	250	60	150	600	791	316	5130	246	1250	200
MIN	153	125	65	25	27	120	169	84	53	49	134	92
AC-FT	13990	11230	8250	2060	6860	25510	18060	10510	42150	10600	17460	7980

CAL YR 1979 TOTAL 166268 MEAN 456 MAX 5940 MIN 25 AC-FT 329800
WTR YR 1980 TOTAL 88061 MEAN 241 MAX 5130 MIN 25 AC-FT 174700

06439000 CHERRY CREEK NEAR PLAINVIEW, SD

LOCATION.--Lat 44°44'38", long 102°03'11", in SW¼NE¼ sec.16, T.9 N., R.17 E., Meade County, Hydrologic Unit 10120113, on left bank 5 ft (2 m) downstream from bridge on State Highway 73, 0.2 mi (0.3 km) downstream from small right-bank tributary, 6.2 mi (10.0 km) downstream from Red Owl Creek, and 11 mi (18 km) northeast of Plainview.

DRAINAGE AREA.--1,190 mi^2 (3,080 km^2), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for October and November 1945, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,158.06 ft (657.777 m) National Geodetic Vertical Datum of 1929. Prior to June 8, 1948, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--35 years, 45.0 ft^3/s (1.274 m^3/s), 32,600 acre-ft/yr (40.2 hm^3/yr); median of yearly mean discharges, 27 ft^3/s (0.76 m^3/s), 19,600 acre-ft/yr (24 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft^3/s (496 m^3/s) Apr. 1, 1952, gage height, 22.63 ft (6.898 m); no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 94 ft^3/s (2.66 m^3/s) June 20, gage height, 5.16 ft (1.573 m), no peak above base of 1,000 ft^3/s (28.3 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	12	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.56	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	52	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	53	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	31	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	21	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	18	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	24	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	11	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	5.1	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	1.5	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	216.67	12.60	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	7.22	.41	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	53	12	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	430	25	.00	.00

CAL YR 1979 TOTAL 6371.33 MEAN 17.5 MAX 488 MIN .00 AC-FT 12640
WTR YR 1980 TOTAL 229.27 MEAN .63 MAX 53 MIN .00 AC-FT 455

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD

LOCATION.--Lat 44°36'10", long 101°29'24", in NE¼NW¼ sec.5, T.7 N., R.22 E., Ziebach County, Hydrologic Unit 10120112, on left bank 0.5 mi (0.8 km) east of village of Cherry Creek, 0.5 mi (0.8 km) downstream from Cherry Creek and 1.7 mi (2.7 km) upstream from Plum Creek.

DRAINAGE AREA.--23,900 mi^2 (61,900 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,699.29 ft (517.944 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 17, 1960, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Angostura Reservoir 197 mi (317 km) upstream (see station 06401000) since October 1949 and upstream reservoirs on Rapid Creek since 1956 and Belle Fourche River since 1952. Flow also affected by diversions for irrigation of about 70,000 acres (283 km^2) and return flow from irrigated areas. Gage-height telemeter at station.

AVERAGE DISCHARGE.--20 years, 825 ft^3/s (23.36 m^3/s), 597,700 acre-ft/yr (737 hm^3/yr); median of yearly mean discharges, 720 ft^3/s (20.4 m^3/s), 522,000 acre-ft/yr (640 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,800 ft^3/s (1,240 m^3/s) June 16, 1967, gage height, 14.75 ft (4.496 m); no flow Jan. 6 to Feb. 2, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,080 ft^3/s (116 m^3/s) June 16, gage height, 5.61 ft (1.710 m); minimum daily, 25 ft^3/s (0.71 m^3/s) Jan. 12, Feb. 1, 2.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 4-16, July 26 to Sept. 30; stage-discharge relation affected by ice Nov. 19 to Mar. 25)

0.80	45	1.5	192	3.0	920
1.0	77	2.0	370	4.0	1,820
1.2	115	2.5	615	5.0	3,120

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	310	633	130	70	25	130	728	180	265	75	207	175
2	350	350	125	70	25	130	648	180	676	67	172	164
3	380	272	130	65	27	150	535	170	851	60	148	164
4	420	235	140	60	35	325	631	150	659	50	120	216
5	350	210	150	60	45	380	613	130	480	202	109	192
6	300	195	200	55	60	400	673	110	465	204	109	164
7	250	192	230	50	140	400	535	95	586	167	111	148
8	220	189	250	48	150	380	480	93	406	148	111	129
9	190	148	240	40	150	370	451	99	455	141	103	122
10	170	204	230	35	140	370	451	105	437	167	101	115
11	151	225	200	30	140	400	433	99	358	151	103	109
12	148	258	180	25	140	400	428	111	290	216	405	166
13	146	283	160	26	140	400	560	103	232	175	286	146
14	148	269	150	27	140	420	646	127	192	196	262	178
15	148	255	140	30	130	450	495	305	198	175	245	161
16	151	255	120	32	130	550	460	342	2950	138	248	129
17	146	248	100	32	140	580	350	286	2660	151	1180	124
18	146	242	90	30	150	580	300	238	2520	186	782	136
19	146	230	100	30	160	560	270	201	1310	207	631	138
20	141	220	110	30	160	540	250	198	759	195	555	133
21	138	220	130	30	160	500	240	201	897	186	460	129
22	143	210	120	32	160	550	230	181	664	192	410	133
23	148	200	120	35	150	600	210	178	545	229	362	124
24	159	210	110	35	150	800	190	186	410	245	330	120
25	167	200	105	33	150	600	170	170	302	238	298	117
26	146	200	100	33	150	520	170	151	272	235	276	115
27	141	190	95	30	150	433	180	164	213	222	248	113
28	136	170	90	30	145	401	210	217	161	213	225	103
29	133	150	80	28	140	401	200	213	117	229	216	97
30	146	140	75	28	---	520	190	207	95	238	210	91
31	570	---	75	28	---	540	---	222	---	225	186	---
TOTAL	6438	7003	4275	1167	3582	13780	11927	5412	20425	5523	9209	4151
MEAN	208	233	138	38.3	124	445	398	175	681	178	297	138
MAX	570	633	250	70	160	800	728	342	2950	245	1180	216
MIN	133	140	75	25	25	130	170	93	95	50	101	91
AC-FT	12770	13890	8480	2350	7100	27330	23660	10730	40510	10950	18270	8230

CAL YR 1979 TOTAL 180043 MEAN 493 MAX 3620 MIN 25 AC-FT 357100
WTR YR 1980 TOTAL 92912 MEAN 254 MAX 2950 MIN 25 AC-FT 184300

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued
(National stream-quality accounting network station)
(National pesticide water-monitoring network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1975 to September 1976.
WATER TEMPERATURES: January 1975 to September 1976, October 1977 to September 1978.
SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1976 (discontinued).

INSTRUMENTATION.--Water-quality monitor since June 16, 1977 (discontinued September 1979).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,400 micromhos Jan. 27, 28, 1975; minimum daily, 620 micromhos Apr. 25, 1975.
WATER TEMPERATURES: Maximum daily, 35.0°C Aug. 26, 1975; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 66,000 mg/L May 25, 1976; minimum daily mean, 80 mg/L Nov. 15-17, 1972.
SEDIMENT LOADS: Maximum daily, 2,530,000 tons (2,300,000 tonnes) June 12, 1972; minimum daily, 15 tons (14 tonnes) Dec. 14, 1973.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT 11...	1135	163	2500	8.7	12.0	18	108	K20	K15	1000	870	240
NOV 06...	1315	215	2450	8.2	.0	1200	14.2	K70	K260	750	580	190
DEC 05...	1000	162	3300	8.6	.0	42	14.6	K8	125	1200	980	290
JAN 08...	1345	48	3200	8.1	.0	8.5	18.8	K8	K3	1200	960	300
FEB 06...	1100	58	3500	8.2	.0	1.2	19.2	K9	50	1200	940	300
MAR 04...	1230	323	2150	7.7	.0	120	15.2	K5	180	800	630	210
APR 07...	1030	509	1480	8.2	11.0	5000	11.4	K400	2460	390	240	110
MAY 07...	1330	92	2400	8.4	18.0	10	9.7	ND	K2	870	730	210
JUN 05...	1330	476	2000	8.4	23.0	4400	7.2	K8400	K3030	560	420	150
JUL 03...	1200	57	2520	7.2	23.6	28	8.6	30	K17	920	780	220
31...	1100	223	2290	7.8	25.1	1200	8.3	K340	K170	810	690	190
SEP 18...	1115	131	2690	8.0	15.0	180	9.0	140	95	1100	930	240

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT 11...	99	210	31	2.9	13	220	140	1200	56	.5	6.9	1960
NOV 06...	67	220	38	3.5	13	230	170	910	62	.5	13	1640
DEC 05...	120	190	25	2.4	6.5	200	240	1200	83	.5	9.0	2530
JAN 08...	120	250	30	3.1	14	260	280	1300	98	.6	11	2360
FEB 06...	120	260	31	3.2	14	270	300	1300	130	.5	11	2450
MAR 04...	66	210	36	3.2	12	220	170	940	92	.5	13	1710
APR 07...	29	180	49	3.9	9.9	--	150	560	41	.5	13	1060
MAY 07...	83	220	35	3.3	15	--	140	1000	78	.4	.9	1960
JUN 05...	45	180	40	3.3	13	--	140	770	27	.0	1.7	1360
JUL 03...	91	260	37	3.7	16	--	140	1200	66	.4	12	2130
31...	81	200	35	3.1	14	--	120	1100	35	.6	8.3	1820
SEP 18...	110	260	35	3.5	7.2	--	120	1400	88	.5	4.3	2260

K Non-ideal colony count.
ND Not detected.

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT												
11...	1910	2.67	863	--	.21	.13	.20	.26	.05	.06	.40	.70
NOV												
06...	1580	2.23	952	--	1.3	1.3	.06	.08	.08	.10	1.1	1.2
DEC												
05...	2050	3.44	1110	--	1.4	1.6	.03	.04	.09	.11	.83	.83
JAN												
08...	2270	3.21	309	--	1.6	1.6	.12	.15	.12	.15	.80	.80
FEB												
06...	2320	3.33	388	--	1.5	1.5	.03	.04	.07	.08	.57	.62
MAR												
04...	1650	2.33	1490	--	.73	.73	.21	.27	.25	.30	.65	1.3
APR												
07...	1040	1.44	1460	--	1.9	2.0	.06	.10	.13	.16	.56	7.8
MAY												
07...	1690	2.67	487	16	.02	.02	.11	.14	.15	.18	.89	1.2
JUN												
05...	1280	1.85	1750	1420	2.5	2.5	.00	.00	.00	.00	1.5	16
JUL												
03...	1950	2.90	331	37	.00	.02	.16	.21	.16	.19	1.8	1.0
31...	1700	2.48	1100	5920	.14	.19	.03	.04	.04	.05	2.0	3.8
SEP												
18...	2180	3.07	799	270	.09	.00	.01	.01	.00	.00	.75	1.4

DATE	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	PHOS-PHORUS, HYDRO. + ORTHO DISSOL. (MG/L AS P) (00677)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT											
11...	.60	.15	.75	.81	.88	3.9	--	--	--	.000	.010
NOV											
06...	1.2	.10	1.3	2.5	2.6	12	--	--	--	.030	2.300
DEC											
05...	.86	.02	.92	2.3	2.5	11	--	--	--	.060	.070
JAN											
08...	.92	.00	.92	2.5	2.5	11	--	--	--	.190	.220
FEB											
06...	.60	.09	.69	2.1	2.2	9.7	--	--	--	.090	.100
MAR											
04...	.86	.64	1.5	1.6	2.2	9.9	--	--	--	.040	.320
APR											
07...	.64	7.3	7.9	2.5	9.9	44	--	--	--	.100	7.600
MAY											
07...	1.0	.40	1.4	1.0	1.4	6.3	.00	--	--	.040	.040
JUN											
05...	1.5	15	16	4.0	19	82	.01	--	--	.010	7.000
JUL											
03...	2.0	.00	1.2	2.0	1.2	5.4	--	.00	.00	.000	.030
31...	2.0	1.8	3.8	2.1	4.0	18	.01	--	--	.030	3.600
SEP											
18...	.76	.64	1.4	.85	1.4	6.2	.00	--	--	.000	.170

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)
OCT											
11...	.03	--	5.0	.5	--	--	.470	.390	.810	.000	98.8
NOV											
06...	7.1	--	--	--	14	--	--	--	--	--	--
DEC											
05...	.21	--	--	--	11	260	--	--	--	--	--
JAN											
08...	.67	--	59	.2	--	--	--	--	--	--	--
FEB											
06...	.31	--	--	--	4.6	--	--	--	--	--	--
MAR											
04...	.98	--	--	--	7.5	--	--	--	--	--	--
APR											
07...	23	--	26	--	--	--	--	--	--	--	--
MAY											
07...	.12	.00	--	--	7.2	66000	48.5	47.2	.220	.020	5909
JUN											
05...	21	.03	--	--	46	--	31.0	29.1	1.58	.000	1203
JUL											
03...	.09	--	6.2	--	--	--	9.69	8.82	.880	.110	989
31...	11	.03	--	--	18	--	1.97	1.42	.050	.000	11000
SEP											
18...	.52	.00	--	--	10	--	--	--	--	--	--

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT												
11...	1135	163	339	149	--	--	--	--	97	97	100	--
NOV												
06...	1315	215	4070	2360	--	83	91	97	99	100	--	--
DEC												
05...	1000	162	381	167	92	--	--	--	--	--	--	--
JAN												
08...	1345	48	281	37	87	--	--	--	--	--	--	--
FEB												
06...	1100	58	269	43	--	--	--	--	71	83	92	95
MAR												
04...	1230	323	444	387	--	--	--	--	96	98	99	100
APR												
07...	1030	509	17700	24300	--	68	82	95	100	--	--	--
MAY												
07...	1330	92	28	7.0	50	--	--	--	--	--	--	--
JUN												
05...	1330	476	18600	23900	--	68	86	98	100	--	--	--
JUL												
03...	1200	57	--	--	--	--	--	--	--	--	--	--
31...	--	--	6640	--	--	71	76	79	100	--	--	--
31...	1100	223	--	--	--	--	--	--	--	--	--	--
SEP												
18...	1115	131	222	79	--	60	62	63	93	--	--	--

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT 11...	1135	7	0	7	1	0	1	10	0	10	0
JAN 08...	1345	--	--	--	1	0	1	10	10	0	2
APR 07...	1030	56	47	9	1	1	0	110	100	10	35
JUL 03...	1200	7	0	7	3	0	3	0	0	0	0

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
OCT 11...	0	0	1	1	0	940	10	7	7	0	100
JAN 08...	2	0	0	0	0	180	30	4	4	0	220
APR 07...	35	0	160	160	3	110000	20	170	170	1	3400
JUL 03...	--	<3	31	28	3	880	<10	20	20	0	130

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT 11...	30	70	--	--	3.3	2	0	2	10	0	10
JAN 08...	20	200	.6	.0	.6	4	0	4	--	--	30
APR 07...	3400	0	.3	.3	.0	9	5	4	390	380	10
JUL 03...	90	40	.1	.1	.0	2	0	2	80	80	5

< Less than.

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL (UG/L) (39350)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)
NOV											
06...	1315	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	DIAZINON, TOTAL (UG/L) (39570)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DIELDRIN TOTAL (UG/L) (39380)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)
NOV											
06...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL TRITHION, TOTAL (UG/L) (39790)
NOV										
06...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	PARATHION, TOTAL (UG/L) (39540)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)
NOV										
06...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND Not detected.

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 7,79	SEP 6,79	DEC 5,79	MAY 5,80	MAY 7,80	JUL 3,80
TIME	1000	1035	1000	1000	1330	1200
TOTAL CELLS/ML	10000	11000	260	330	66000	70000
DIVERSITY: DIVISION	1.0	0.7	0.1	1.3	0.0	0.6
.CLASS	1.0	0.7	0.1	1.3	0.0	0.6
..ORDER	1.2	1.2	0.1	1.8	0.0	0.7
...FAMILY	2.1	2.5	1.7	2.2	0.0	0.7
....GENUS	2.5	2.8	1.7	2.2	0.0	0.8

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	64	1	--	-	--	-	--	-	--	-	--	-
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	1100	10	--	-	--	-	--	-	--	-
...COELASTRACEAE												
....COELASTRUM	--	-	600	5	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....GOLENKINIA	260	2	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	1300	13	2000#	18	5	2	--	-	--	-	6800	10
....CHLORELLA	--	-	300	3	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	150	1	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	900	9	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	75	1	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	*	0
....TETRAEDRON	64	1	75	1	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	75	1	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....SCENEDESMUS	4900#	47	4000#	36	--	-	--	-	--	-	620	1
....TETRASTRUM	260	2	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	390	4	670	6	--	-	29	9	--	-	1500	2
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	390	4	750	7	--	-	120#	35	66000#	100	60000#	86
..PENNALES												
...ACHNANTHACEAE												
....RHOICOSPHENIA	--	-	--	-	5	2	29	9	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	29	9	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	10	4	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	64	1	75	1	100#	39	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	130	1	1000	9	120#	45	--	-	--	-	*	0
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	20	8	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	120#	35	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	64	1	--	-	--	-	14	4	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	1500	15	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	75	1	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2000	1100	---	---	---	---	1820	2110	2230	2360	2050	2200
2	2000	1120	---	---	---	---	2100	---	2040	2390	2100	2200
3	1900	1440	---	---	---	---	2100	---	1950	2520	2150	2200
4	1950	1440	---	---	---	2150	1930	---	1880	2600	2200	2250
5	2100	1440	3300	---	---	---	---	---	1720	2690	2250	2250
6	2050	2450	---	---	3500	---	---	---	2000	2620	2300	2100
7	2050	---	2300	---	---	---	1480	2400	2110	1910	2200	1900
8	2200	2000	1800	3200	---	---	1640	2340	1940	2010	2250	1900
9	2200	---	2500	3400	---	---	1970	2400	1880	2200	2250	2250
10	2200	---	2400	3300	---	---	2070	2420	1950	2080	2200	2250
11	2500	2150	2400	3700	---	---	2110	2460	1800	2320	1650	2250
12	2450	2200	2350	3400	---	---	2120	2480	2050	2210	1650	2250
13	2450	---	2500	3500	---	---	2110	2450	2080	2250	1630	2250
14	2450	910	2400	3500	---	---	1750	2510	2170	2110	1600	2250
15	2450	---	2300	3500	---	---	1420	2510	2160	2150	1850	2200
16	2500	2200	2550	3400	---	---	1670	2100	1320	2180	1750	2200
17	2500	2200	2500	3400	---	---	2080	1750	1110	1930	1650	2350
18	2500	1340	1850	3300	---	---	2080	2160	1150	2170	1060	2690
19	2250	1500	1800	3800	---	---	2150	2130	1280	2130	1460	2560
20	2250	1700	2250	3300	---	---	2180	2240	1350	2170	1800	2550
21	2250	---	2500	3500	---	---	2220	2200	1350	2170	1800	2560
22	2250	---	2400	3800	---	---	2240	2210	1180	2140	1950	2550
23	2250	---	2300	3200	---	---	2270	2280	1560	2140	1950	2580
24	2250	---	2050	2400	---	---	2260	2490	1750	2100	1900	2560
25	2250	---	2100	2400	---	---	2280	2570	1820	2170	1950	2560
26	2250	---	2600	2400	---	---	2300	2530	1910	2140	2050	2600
27	2250	---	2600	2400	---	---	2270	2530	2050	2080	2050	2600
28	2250	---	2600	2700	---	---	2220	2500	2110	2100	2090	2680
29	2250	---	2600	2700	---	---	2150	2430	2230	2140	2000	2680
30	2300	---	2500	2700	---	---	2150	2170	2290	2150	2300	2700
31	2350	---	---	2700	---	---	---	2320	---	2290	2200	---
MEAN	2250	1680	2380	3150	3500	2150	2040	2330	1810	2210	1940	2370

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	4.0	---	---	---	---	---	20.0	19.0	24.0	20.0	19.0
2	---	4.0	---	---	---	---	---	20.0	18.0	22.0	25.0	19.0
3	---	4.0	---	---	---	---	---	18.0	20.0	23.5	22.0	20.0
4	---	5.0	---	---	---	.0	---	---	21.0	25.0	26.0	18.0
5	---	---	.0	---	---	---	---	---	23.0	28.0	23.0	18.0
6	---	.0	---	---	.0	---	---	---	20.0	29.0	23.0	25.0
7	---	---	---	---	---	---	11.0	18.0	16.0	27.0	25.0	22.0
8	---	---	---	.0	---	---	10.0	16.0	18.0	21.0	20.0	20.0
9	---	---	---	---	---	---	10.5	14.0	18.0	23.0	23.0	19.0
10	---	---	---	---	---	---	5.5	14.0	21.0	27.0	20.0	18.0
11	12.0	4.0	---	---	---	---	10.0	16.0	20.0	24.0	20.0	16.0
12	---	5.5	---	---	---	---	10.5	14.0	23.0	25.0	23.0	15.0
13	---	5.0	---	---	---	---	12.0	10.0	22.0	26.0	22.0	15.0
14	---	4.5	---	---	---	---	12.0	14.0	21.0	24.0	18.0	14.0
15	---	5.0	---	---	---	---	12.0	15.0	19.0	24.0	18.0	24.0
16	---	---	---	---	---	---	13.0	14.0	18.0	20.0	19.0	25.0
17	---	---	---	---	---	---	15.0	14.0	22.0	21.0	22.0	24.0
18	---	6.5	---	---	---	---	19.0	16.0	22.0	22.0	22.0	15.0
19	---	---	---	---	---	---	20.0	16.0	22.0	21.0	21.0	25.0
20	---	---	---	---	---	---	22.0	18.0	23.0	20.0	19.0	23.0
21	---	---	---	---	---	---	22.0	20.0	22.0	21.0	18.0	20.0
22	---	---	---	---	---	---	18.0	20.0	25.0	21.0	23.0	18.0
23	---	---	---	---	---	---	16.0	17.0	23.0	20.0	24.0	16.0
24	---	---	---	---	---	---	15.0	20.0	27.0	26.0	20.0	15.0
25	---	---	---	---	---	---	16.0	19.0	24.0	21.0	20.0	16.0
26	---	---	---	---	---	---	14.0	17.0	28.0	21.0	16.0	15.0
27	---	---	---	---	---	---	21.0	16.0	25.0	28.0	21.0	14.0
28	10.0	---	---	---	---	---	22.0	20.0	22.0	28.0	25.5	20.0
29	8.0	---	---	---	---	---	20.0	19.0	25.0	25.0	23.0	18.0
30	5.0	---	---	---	---	---	21.0	20.0	23.0	19.0	18.0	19.0
31	5.0	---	---	---	---	---	---	17.0	---	25.0	18.0	---
MEAN	8.0	4.5	.0	.0	.0	.0	15.5	17.0	21.5	23.5	21.0	19.0

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440 HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
78/10/18	11 30	0001							10			
79/04/04	11 00								30			
79/05/08	11 00								10			
79/06/05	11 00	0000							15			
79/07/10	11 00	0000							10			
79/08/07	11 00								10			
79/10/11	11 00								5			

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515 RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
77/10/20	10 00	0001										7.0
78/04/27	10 30	0001										113.0
78/05/18	09 30	0001										92.0
78/06/08	09 15	0001										47.0
78/07/11	11 30											81.0
78/08/07	10 30	0001										29.0
78/09/12	13 00											13.0
78/10/18	11 30	0001				13		225				19.0
79/04/04	11 00		0.000			512		130				32.0
79/05/08	11 00		0.000			27		314				15.0
79/06/05	11 00	0000	0.000			29		341				20.0
79/07/10	11 00	0000	0.240			100		213				
79/08/07	11 00		0.000			176		30				24.0
79/09/05	11 00		0.000			147		0.3				19.0
79/10/11	11 00		0.000			47		305				10.0

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
77/10/20	10 00	0001								14250		140
78/04/27	10 30	0001								48000		
78/05/18	09 30	0001				0.000						
78/06/08	09 15	0001				0.020				39400		
78/07/11	11 30									147500		
78/08/07	10 30	0001				0.000				7130		
78/09/12	13 00					0.000				3490		
78/10/18	11 30	0001				0.000				250		
79/04/04	11 00					0.000				22500		
79/05/08	11 00					0.000				930		
79/06/05	11 00	0000				0.000						
79/07/10	11 00	0000			0.010							
79/08/07	11 00					0.000						
79/09/05	11 00					0.000						
79/10/11	11 00					0.000						

Analyses by Corps of Engineers.
Tables from STORET.

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
77/10/20	10 00	0001	1.00							120		0.0
78/04/27	10 30	0001	2.00							96		0.2
78/05/18	09 30	0001	0.00							97		0.2
78/06/08	09 15	0001	1.00							81		0.2
78/08/07	10 30	0001	1.00							78		0.0
78/09/12	13 00		0.00							89		0.1
78/10/18	11 30	0001	0.00							11		0.0
79/04/04	11 00		0.00							110		0.0
79/05/08	11 00		0.00							125		0.4
79/06/05	11 00	0000	0.00							109		0.5
79/07/10	11 00	0000	9.00							420		1.0
79/08/07	11 00		1.00							85		1.1
79/09/05	11 00		0.00							80		3.4
79/10/11	11 00		0.00							101		0.9

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
77/10/20	10 00	0001				4.0	10				
78/05/18	09 30	0001	0	70							
78/06/08	09 15	0001	0	56							
78/07/11	11 30		0	130							
78/08/07	10 30	0001	0	14							
78/09/12	13 00		0	17							
78/10/18	11 30	0001	0	23							
79/04/04	11 00		0	50							
79/05/08	11 00		0	0							
79/06/05	11 00	0000	0	9							
79/07/10	11 00	0000	20	380							
79/08/07	11 00		60	16							
79/09/05	11 00		0	21							
79/10/11	11 00		20	22							

Analyses by Corps of Engineers.
Tables from STORET.

06439500 CHEYENNE RIVER NEAR EAGLE BUTTE, SD

LOCATION.--Lat 44°41'44", long 101°13'08", in NE¼SE¼ sec.32, T.9 N., R.24 E., Haakon County, Hydrologic Unit 10120112, at discontinued gaging station on downstream side near center of bridge on State Highway 63, 0.5 mi (0.8 km) upstream from Hermaphrodite Creek and 21 mi (33.8 km) south of Eagle Butte.

DRAINAGE AREA.--24,500 mi² (63,500 km²), approximately.

PERIOD OF RECORD.--Water years 1972 to current year.

REMARKS.--Station is affected by backwater from Oahe Dam; discharge records not available.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT									
11...	0900	--	2350	8.8	13.0	980	840	230	98
NOV									
06...	1315	--	1770	8.0	.0	430	270	120	32
DEC									
05...	1100	--	3000	7.6	.0	1100	810	240	110
JAN									
08...	1545	--	3400	8.1	.0	1300	1000	320	120
FEB									
06...	1100	--	2900	8.2	.0	1200	940	310	110
MAR									
04...	1130	--	1770	7.8	.0	710	540	180	63
APR									
07...	0830	--	1550	8.0	10.0	540	380	150	41
MAY									
07...	1530	--	2380	8.5	17.5	900	760	220	84
JUN									
05...	1400	--	2000	8.2	23.0	650	520	170	54
JUL									
03...	1345	--	2390	8.0	26.7	890	760	220	83
31...	1330	--	2170	7.8	25.0	890	780	210	88
SEP									
18...	1300	--	2600	8.1	15.1	1100	930	240	110

06439500 CHEYENNE RIVER NEAR EAGLE BUTTE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS- SIUM DIS- SOLVED (MG/L AS NA) (00933)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT									
11...	200	30	2.8	13	210	140	1200	53	.5
NOV									
06...	230	62	4.8	10	240	160	670	36	.6
DEC									
05...	280	50	3.8	3.7	280	240	1300	80	.5
JAN									
08...	250	40	3.0	14	260	270	1300	100	.6
FEB									
06...	260	31	3.2	14	270	290	1200	120	.5
MAR									
04...	140	30	2.3	9.5	150	170	720	61	.4
APR									
07...	190	43	3.5	12	--	160	640	58	.5
MAY									
07...	220	34	3.2	14	--	140	1100	77	.3
JUN									
05...	180	37	3.1	12	--	130	810	27	.4
JUL									
03...	260	38	3.6	16	--	130	1200	54	.6
31...	210	34	3.1	15	--	110	1200	43	.6
SEP									
18...	240	33	3.2	7.6	--	120	1400	61	.5

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)
OCT									
11...	6.7	1690	2.57	--	.15	.000	.000	.00	.00
NOV									
06...	17	1220	1.66	--	1.5	5.300	.060	--	--
DEC									
05...	9.3	2170	2.95	--	1.3	.090	.070	.05	.15
JAN									
08...	11	2290	3.11	--	1.5	.210	.180	.12	.37
FEB									
06...	11	2210	3.01	--	1.5	.110	.090	.09	.28
MAR									
04...	7.4	1290	1.75	--	.85	.300	.100	.13	.40
APR									
07...	12	1210	1.65	--	1.2	5.400	.130	.04	.12
MAY									
07...	1.0	1800	2.45	--	.02	.050	.010	.00	.00
JUN									
05...	17	1360	1.85	--	1.9	.320	.010	.02	.06
JUL									
03...	7.8	1920	2.61	--	.00	.060	.000	.00	.00
31...	7.6	1840	2.50	--	.21	4.700	.010	.02	.06
SEP									
18...	4.1	2140	2.91	--	.00	.200	.000	.00	.00

06439980 LAKE OAHE NEAR PIERRE, SD

LOCATION.--Lat 44°27'30", long 100°23'29", in NE¼ sec.1, T.111 N., R.80 W., 5th principal meridian, Hughes County, Hydrologic Unit 10130105, in Pier A of Control Tower No. 1 of powerhouse intake structure of dam on Missouri River, 6.0 mi (9.7 km) northwest of Pierre, 7.1 mi (11.4 km) upstream from Bad River, and at mile 1,072.3 (1,725.3 km).

DRAINAGE AREA.--243,500 mi^2 (630,700 km^2), approximately.

PERIOD OF RECORD.--August 1958 to current year (monthend contents only). Prior to October 1967, published as Oahe Reservoir near Pierre.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Jan. 14, 1959, nonrecording gages at various locations upstream from outlet works, Jan. 14, 1959, to Sept. 30, 1962, recorder in Tower No. 1 of outlet works, all at same datum.

REMARKS.--Reservoir is formed by an earthfill dam; storage began in August 1958. Maximum capacity, 23,630,000 acre-ft (29,100 hm^3) below elevation 1,620.0 ft (493.78 m), top of spillway gates. Normal maximum, 22,530,000 acre-ft (27,800 hm^3) below 1,617.0 ft (492.86 m), of which about 2,390,000 acre-ft (2,950 hm^3) is designated for flood control. Inactive storage, 5,538,000 acre-ft (6,830 hm^3) below elevation 1,540.0 ft (469.39 m). Dead storage, 2,000 acre-ft (2.47 hm^3) below elevation 1,425.0 ft (434.34 m), invert of lowest outlet tunnel. Figures given herein represent elevations at powerhouse intake structure and total contents adjusted for wind effect.

The spillway consists of a gated chute with flat crest at elevation 1,596.5 ft (486.61 m), 8 gates, 50 by 23.5 ft (15.2 X 7.2 m) each; design capacity, 300,000 ft^3/s (8,500 m^3/s). The outlet works consist of 7 turbines with a generating capacity of 85,000 kilowatts each. Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevation and contents furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 22,681,000 acre-ft (28,000 hm^3) Aug. 22, 1975, elevation, 1,617.9 ft (493.14 m), affected by wind; minimum since initial filling, 15,112,000 acre-ft (18,600 hm^3) Dec. 10, 12-14, 1977, elevation, 1,593.0 ft (485.55 m), affected by ice.

EXTREMES FOR CURRENT YEAR.--Maximun contents, 20,368,000 acre-ft (25,100 hm^3) Oct. 1, elevation, 1,611.02 ft (491.039 m); maximum elevation, 1,611.52 ft (491.191 m) Oct. 4; minimum contents, 16,370,000 acre-ft (20,200 hm^3) Sept. 30, elevation, 1,597.73 ft (486.988 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation	Contents	Change in contents
Sept. 30	1611.55	20390000	
Oct. 31	1608.15	19379000	-1011000
Nov. 30	1606.02	18775000	-604000
Dec. 31	1605.14	18523000	-252000
CAL YR 1979			+181000
Jan. 31	1604.26	18241000	-282000
Feb. 29	1606.18	18820000	+579000
Mar. 31	1607.94	19394000	+574000
Apr. 30	1608.09	19411000	+17000
May 31	1605.88	18737000	-674000
June 30	1604.98	18377000	-360000
July 31	1603.08	17852000	-525000
Aug. 31	1599.96	16957000	-895000
Sept. 30	1597.96	16370000	-587000
WTR YR 1980			-4020000

NOTE.--Reservoir frozen over Jan. 29 to Apr. 6.

06440000 MISSOURI RIVER AT PIERRE, SD
(National stream-quality accounting network station)

LOCATION.--Lat 44°22'25", long 100°22'20", in SE¼ sec.21, T.5 N., R.31 E., Hughes County, Hydrologic Unit 10140102, at discontinued gaging station, near right bank on downstream side of pier of Chicago and North Western Transportation Company bridge, 1.3 mi (2.1 km) upstream from Bad River, 5.8 mi (9.3 km) downstream from Oahe Dam, and at mile 1,006.5 (1,716 km).

DRAINAGE AREA.--243,500 mi^2 (630,700 km^2), approximately.

PERIOD OF RECORD.--Water years 1971 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1971 to current year.
WATER TEMPERATURES: July 1971 to current year.

COOPERATION.--Flow completely regulated by Lake Oahe (station 06439980) 5.8 mi (9.3 km) upstream. Discharge furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 850 micromhos Dec. 2, 1974, Dec. 4, 1979, Feb. 4, 1980; minimum daily, 530 micromhos Dec. 24, 1974.
WATER TEMPERATURES: Maximum daily, 24.0°C July 31, Aug. 3, 1977, Aug. 21, 1980; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 850 micromhos Dec. 4, Feb. 4; minimum daily, 710 micromhos Oct. 1-31, Nov. 1-7, 9-30.
WATER TEMPERATURES: Maximum daily, 24.0°C Aug. 21; minimum daily, 0.0°C Jan. 10, 11, 25-31.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
09...	1345	36800	720	7.8	15.0	2.1	9.0	K6	K8	230	78	55
NOV												
08...	1445	24200	790	8.5	7.0	1.7	11.1	20	20	220	69	53
DEC												
04...	1600	31500	8	8.8	5.0	2.4	11.6	ND	K5	250	96	59
JAN												
10...	0800	47600	835	8.4	.0	22	14.8	K2	K7	240	55	60
FEB												
04...	1400	23300	850	8.7	.0	1.2	15.6	1	30	250	98	58
MAR												
03...	1530	31800	720	8.3	.0	2.7	14.6	K2	36	250	87	61
APR												
11...	0800	27300	800	9.4	3.0	3.0	13.0	ND	K6	240	90	58
MAY												
16...	1330	35300	840	8.1	7.5	2.9	12.0	K1	K6	250	86	59
JUN												
12...	1250	35100	790	8.1	15.0	4.2	9.6	20	30	250	83	60
JUL												
11...	0900	39000	792	8.2	19.5	5.4	8.5	K140	K50	250	89	60
AUG												
06...	1610	55100	797	8.0	21.6	4.4	8.0	3	8	250	100	59
30...	1320	39500	810	8.4	17.8	2.2	8.9	--	--	260	89	61
SEP												
05...	1330	42000	803	8.2	20.5	1.2	8.2	K8	K14	250	86	59
30...	1320	39500	810	8.4	18.0	--	8.9	--	--	--	--	--

K Non-ideal colony count.
ND Not detected.

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)
OCT												
09...	22	69	39	2.0	5.5	75	150	230	9.0	.5	6.4	500
NOV												
08...	21	63	38	1.9	5.3	68	150	210	9.7	.4	6.2	512
DEC												
04...	24	72	37	2.0	12	84	150	220	10	.5	7.2	515
JAN												
10...	23	80	41	2.2	6.6	87	190	230	12	.5	6.0	521
FEB												
04...	25	76	39	2.1	4.8	81	150	230	11	.5	5.7	528
MAR												
03...	23	77	40	2.1	5.4	82	160	230	10	.5	9.1	509
APR												
11...	23	76	40	2.1	5.1	--	150	240	11	.4	5.6	--
MAY												
16...	24	76	40	2.1	4.7	--	160	220	10	.3	6.3	521
JUN												
12...	25	80	40	2.2	5.0	--	170	240	11	.5	5.7	530
JUL												
11...	24	79	40	2.2	5.1	--	160	250	10	.7	5.5	546
AUG												
06...	25	80	40	2.2	5.0	--	150	250	10	.6	5.4	547
30...	26	85	41	2.3	5.6	--	170	240	10	.4	6.1	541
SEP												
05...	24	79	40	2.2	5.3	--	160	240	14	.5	5.9	602
30...	--	--	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT												
09...	488	.68	49700	--	.10	.07	.02	.03	.01	.01	.46	.49
NOV												
08...	460	.70	33500	--	.18	.16	.05	.06	.01	.01	.44	.51
DEC												
04...	496	.70	43800	--	.31	.15	.07	.09	.02	.02	2.1	1.1
JAN												
10...	533	.71	67000	--	.12	.13	.03	.04	.03	.04	.84	.97
FEB												
04...	502	.72	33200	--	.15	.15	.02	.03	.02	.02	.08	.04
MAR												
03...	513	.69	43700	--	.13	.14	.01	.01	.01	.01	.09	.06
APR												
11...	510	.69	37600	--	.08	.08	--	--	.00	.00	--	.35
MAY												
16...	497	.71	49700	--	.10	.09	.06	.08	.04	.05	1.2	.82
JUN												
12...	530	.72	50200	7	.08	.06	.01	.01	.02	.02	.61	.57
JUL												
11...	531	.74	57500	21	.00	.00	.00	.00	.06	.07	.43	.48
AUG												
06...	525	.74	81400	10	.02	.05	.01	.01	.14	.17	.40	4.1
30...	536	.74	57700	9	.00	.00	.01	.01	.01	.01	.40	.46
SEP												
05...	524	.82	68300	21	.00	.66	.01	.01	.01	.01	.32	.39
30...	--	--	--	--	--	--	--	--	--	--	--	--

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	PHOS-PHORUS, HYDRO. + ORTHO DISSOL. (MG/L AS P) (00677)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT											
09...	.48	.02	.50	.58	.57	2.5	--	--	--	.010	.000
NOV											
08...	.49	.03	.52	.67	.68	3.0	--	--	--	.000	.010
DEC											
04...	2.2	.00	1.1	2.5	1.2	5.5	--	--	--	.010	.030
JAN											
10...	.87	.13	1.0	.99	1.1	5.0	--	--	--	.000	.060
FEB											
04...	.10	.00	.06	.25	.21	.90	--	--	--	.000	.000
MAR											
03...	.10	.00	.07	.23	.21	.90	--	--	--	.000	.000
APR											
11...	--	--	.35	--	.43	1.9	--	--	--	.010	.030
MAY											
16...	1.3	.00	.86	1.4	.95	4.2	--	--	--	.010	.070
JUN											
12...	.62	.00	.59	.70	.65	2.9	.00	--	--	.000	.010
JUL											
11...	.43	.11	.54	.43	.54	2.4	.01	--	--	.010	.010
AUG											
06...	.41	3.8	4.2	.43	4.3	19	.01	--	--	.010	.030
30...	.41	.06	.47	.41	.47	2.1	.00	--	--	.010	.010
SEP											
05...	.33	.07	.40	.33	1.1	4.7	.01	--	--	.010	.010
30...	--	--	--	--	--	--	--	--	--	--	--

DATE	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)
OCT											
09...	.00	--	31	.4	--	--	--	--	--	--	--
NOV											
08...	.03	--	--	--	12	--	--	--	--	--	--
DEC											
04...	.09	--	--	--	9.6	1300	--	--	--	--	--
JAN											
10...	.18	--	9.0	.4	--	--	--	--	--	--	--
FEB											
04...	.00	--	--	--	4.4	--	--	--	--	--	--
MAR											
03...	.00	--	--	--	7.9	--	--	--	--	--	--
APR											
11...	.09	--	4.7	--	--	9500	--	--	--	--	--
MAY											
16...	.21	--	--	--	7.8	--	.787	.236	.420	.000	1312
JUN											
12...	.03	.00	--	--	12	390	1.50	1.26	.210	.000	1143
JUL											
11...	.03	.03	13	--	--	--	2.28	1.26	.030	.000	34000
AUG											
06...	.09	.03	--	--	7.6	1000	--	--	--	--	--
30...	.03	.00	7.0	.3	--	--	--	--	--	--	--
SEP											
05...	.03	.03	--	--	10	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	.000	.000	--

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT									
09...	1345	36800	70	6960	74	--	--	--	--
NOV									
08...	1445	24200	58	3790	92	--	--	--	--
DEC									
04...	1600	31500	70	5950	--	74	80	88	100
JAN									
10...	0800	47600	108	13900	93	--	--	--	--
FEB									
04...	1400	23300	52	3270	78	--	--	--	--
MAR									
03...	1530	31800	53	4550	93	--	--	--	--
APR									
11...	0800	27300	67	4940	--	45	100	--	--
MAY									
16...	1330	35300	67	6390	--	75	100	--	--
JUN									
12...	1250	35100	87	8250	33	--	--	--	--
JUL									
11...	0900	39000	76	8000	20	--	--	--	--
AUG									
06...	--	--	61	--	75	--	--	--	--
06...	1610	55100	--	--	--	--	--	--	--
30...	1320	39500	--	--	--	--	--	--	--
SEP									
05...	1330	42000	49	5560	50	--	--	--	--
30...	1320	39500	36	3840	33	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT											
09...	1345	2	0	2	0	0	<1	10	10	0	0
JAN											
10...	0800	2	0	2	0	0	<1	0	0	0	2
APR											
11...	0800	1	0	1	0	0	1	0	0	0	0
JUL											
11...	0900	2	0	2	0	0	2	10	0	10	0
AUG											
30...	1320	1	0	2	0	--	<1	0	0	10	0

< Less than.

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
OCT 09...	0	<3	0	0	0	100	40	0	0	0	20
JAN 10...	0	<3	1	1	0	780	<10	1	1	0	120
APR 11...	0	<3	0	0	2	160	10	0	0	0	20
JUL 11...	--	<3	150	150	4	250	20	37	37	0	60
AUG 30...	--	<3	4	1	3	1000	20	0	0	2	70

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT 09...	10	10	.0	.0	.3	1	0	1	0	0	<3
JAN 10...	120	4	.1	.1	.0	1	0	1	10	4	6
APR 11...	20	3	.0	.0	.0	1	0	1	0	0	<3
JUL 11...	50	9	.1	.1	.0	1	0	1	70	60	6
AUG 30...	60	8	.1	.0	.1	1	1	0	50	50	5

< Less than.

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 6,79	SEP 10,79	DEC 4,79	APR 11,80
TIME	1000	0900	1600	0800
TOTAL CELLS/ML	64	950	1300	9500
DIVERSITY: DIVISION	1.0	0.9	1.1	0.2
.CLASS	1.0	1.0	1.1	0.2
..ORDER	1.0	0.0	2.0	0.6
...FAMILY	1.5	0.0	2.1	0.6
....GENUS	1.5	0.0	2.6	0.6

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	--	-	5	1	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	26#	40	5	1	*	0	68	1
....CHODATELLA	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	*	0
....TROCHISCIA	--	-	--	-	--	-	*	0
...SCENEDESMACEAE								
....SCENEDESMUS	--	-	--	-	--	-	--	-
..TETRASPORALES								
...COCCOMYXACEAE								
....ELAKATOTHRIX	--	-	--	-	10	1	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....PLATYMONAS	--	-	5	1	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	5	1	160	12	*	0
....MELOSIRA	--	-	--	-	25	2	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	--	-	--	-
...CYMBELLACEAE								
....CYMBELLA	--	-	--	-	*	0	--	-
...FRAGILARIACEAE								
....ASTERIONELLA	--	-	--	-	81	6	--	-
....FRAGILARIA	--	-	--	-	230#	18	55	1
....SYNEDRA	--	-	--	-	*	0	*	0
...NAVICULACEAE								
....NAVICULA	--	-	--	-	10	1	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	20	2	10	1	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....DINOBRYON	--	-	150#	16	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE	--	-	5	1	--	-	--	-
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	26#	40	--	-	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	13#	20	5	1	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	500#	53	500#	39	860	9
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	240#	26	200#	15	8400#	89
....SCHIZOTHRIX	--	-	--	-	50	4	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	--	-	--	-	*	0	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE TIME	MAY 16,80 1330	JUN 12,80 1250	JUL 11,80 0900	AUG 6,80 1610
TOTAL CELLS/ML	26	390	270	1000
DIVERSITY: DIVISION	1.0	0.7	1.9	0.9
.CLASS	1.0	0.7	1.9	0.9
..ORDER	1.0	0.9	2.1	1.5
...FAMILY	1.0	1.6	3.1	1.6
....GENUS	1.0	2.3	3.1	1.8

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	13#	50	57	15	26	10	26	3
....CHODATELLA	--	-	14	4	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-
....TROCHISCIA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....SCENEDESMUS	--	-	--	-	26	10	210#	20
..TETRASPORALES								
...COCCOMYXACEAE								
....ELAKATOTHRIX	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....PLATYMONAS	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	--	-	13	5	--	-
....MELOSIRA	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	14	4	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	26	10	--	-
...CYMBELLACEAE								
....CYMBELLA	--	-	--	-	--	-	--	-
...FRAGILARIACEAE								
....ASTERIONELLA	--	-	--	-	--	-	--	-
....FRAGILARIA	--	-	140#	37	--	-	--	-
....SYNEDRA	--	-	100#	26	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	14	4	26	10	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	43	11	51#	19	13	1
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....DINOBRYON	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE	--	-	--	-	--	-	--	-
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	13#	50	--	-	26	10	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	39	14	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	100	10
....ANACYSTIS	--	-	--	-	39	14	100	10
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	570#	56
....SCHIZOTHRIX	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	710	710	770	760	770	795	795	760	---	---	790	780
2	710	710	770	760	770	790	790	760	780	790	780	790
3	710	710	770	760	765	720	785	760	780	800	780	795
4	710	710	850	760	850	790	760	760	780	790	780	790
5	710	710	770	760	765	790	765	760	780	790	780	803
6	710	710	770	770	770	790	780	770	780	790	797	790
7	710	710	770	770	770	790	780	760	780	790	790	800
8	710	790	770	760	770	790	790	760	790	790	790	790
9	720	710	770	760	770	790	790	760	790	790	790	790
10	710	710	770	760	770	790	795	760	790	790	---	800
11	710	710	770	835	770	790	800	760	790	792	790	790
12	710	710	770	770	760	790	---	760	790	790	790	790
13	710	710	780	770	770	795	795	760	790	790	810	790
14	710	710	770	760	770	800	800	760	790	790	800	805
15	710	710	770	770	775	820	795	760	790	790	796	800
16	710	710	770	770	775	795	800	840	790	790	780	790
17	710	710	770	770	780	790	795	760	780	790	795	795
18	710	710	770	770	765	795	795	760	790	790	790	790
19	710	710	770	770	770	790	795	760	790	790	780	---
20	710	710	770	770	770	790	800	760	790	795	780	790
21	710	710	770	770	770	795	795	760	790	795	780	790
22	710	710	770	770	---	795	795	760	785	795	780	790
23	710	710	770	770	---	---	800	765	790	795	780	790
24	710	710	---	770	775	795	800	765	785	795	780	800
25	710	710	---	770	775	800	810	765	785	790	780	800
26	710	710	770	760	780	795	810	770	780	790	780	800
27	710	710	780	770	775	800	800	760	780	795	780	785
28	710	710	770	770	775	800	800	760	780	795	780	790
29	710	710	770	770	780	795	800	760	780	790	780	800
30	710	710	770	770	---	795	800	760	785	790	---	810
31	710	---	780	760	---	800	---	760	---	790	780	---
MEAN	710	713	774	769	774	792	795	764	786	792	786	794

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.5	13.5	6.5	5.5	.5	3.0	5.0	8.0	---	21.0	22.5	21.5
2	19.0	13.5	6.5	4.5	.5	2.0	5.5	8.5	13.0	21.0	22.5	20.5
3	19.0	14.0	6.5	4.5	1.0	.0	5.0	8.0	11.0	20.0	24.0	21.0
4	19.0	13.5	5.0	4.0	.0	1.0	5.0	8.0	9.5	20.0	22.5	21.5
5	19.0	13.0	7.0	3.5	1.0	2.0	6.0	8.5	9.5	19.5	22.0	20.5
6	19.0	13.0	7.0	3.0	.5	3.5	6.0	9.0	13.0	19.0	21.5	22.5
7	18.5	12.5	7.0	2.0	.0	3.5	6.0	10.0	13.0	19.0	22.5	22.0
8	17.5	7.0	7.5	1.0	.0	3.5	4.5	11.0	13.0	19.5	21.5	20.5
9	15.0	12.5	8.0	1.0	.5	4.0	4.0	11.0	13.5	20.0	23.0	22.0
10	17.0	12.0	8.0	.0	.5	4.0	4.0	11.0	14.5	20.0	---	20.5
11	17.0	12.0	8.0	.0	.5	3.5	3.0	11.5	15.0	19.5	22.0	22.0
12	16.5	12.0	7.5	1.0	1.0	4.0	---	11.0	15.0	21.0	21.0	20.0
13	16.5	12.5	7.5	2.0	1.0	4.0	4.5	11.5	16.5	20.5	22.0	20.0
14	17.0	13.0	7.0	2.0	1.0	4.0	4.5	11.5	16.5	20.0	22.0	20.0
15	16.0	13.0	7.0	2.0	1.0	4.5	4.5	11.5	17.0	21.0	21.0	19.5
16	15.5	13.5	7.0	3.0	1.0	4.5	5.0	7.5	17.0	22.0	20.0	19.5
17	16.0	13.5	6.5	2.0	1.0	4.5	5.0	12.5	17.0	22.0	23.0	20.5
18	16.0	14.0	7.5	1.0	1.0	5.0	5.0	12.5	16.5	22.0	22.0	19.5
19	16.5	13.5	7.5	1.5	1.5	5.0	6.0	12.5	16.5	21.5	22.5	---
20	16.0	13.0	7.5	1.5	1.0	5.0	8.5	13.0	17.0	22.0	22.5	19.5
21	13.5	13.0	7.0	1.5	1.0	4.5	8.0	13.5	17.0	22.5	24.0	19.0
22	14.0	11.5	---	1.0	---	4.5	7.0	13.0	17.0	22.0	23.0	19.0
23	14.5	11.0	7.5	1.5	---	---	6.0	13.0	17.0	21.0	23.0	19.0
24	14.0	9.5	---	1.0	.5	5.0	5.5	13.5	17.5	21.0	23.0	18.5
25	14.0	9.0	---	.0	.5	5.0	6.0	13.5	17.5	21.5	21.0	18.0
26	14.0	8.5	7.5	.0	1.0	4.0	6.0	13.5	17.5	22.0	20.5	18.0
27	14.0	8.0	7.5	.0	1.0	4.0	7.5	13.5	18.0	22.0	21.0	18.0
28	13.5	7.0	7.0	.0	1.0	4.0	8.5	13.5	19.5	23.0	22.5	20.5
29	13.0	7.0	7.0	.0	.5	4.0	8.0	14.0	20.0	22.5	22.0	19.0
30	12.0	7.0	7.0	.0	---	4.0	6.0	13.5	20.5	23.0	---	21.5
31	12.0	---	7.0	.0	---	4.0	---	13.5	---	22.5	22.0	---
MEAN	16.0	11.5	7.0	1.5	.5	4.0	6.0	11.5	15.5	21.0	22.0	20.0

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
78/04/28	13 30	0001								340		
78/06/12	14 00	0001								190		
78/07/13	15 30	0001								460		
78/08/11	13 20	0001								150		
78/09/15	11 00	0001								150		
79/04/09	11 00									140		
79/06/08	11 00									260		
79/07/16	11 00									850		
79/08/16	11 00									200		
79/09/10	11 00									360		
79/10/09	11 00									460		

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
78/04/28	13 30	0001	0.00							43		0.0
78/05/19	13 30	0001	0.00							44		0.0
78/06/12	14 00	0001	1.00							48		0.0
78/07/13	15 30	0001	0.00							48		0.0
78/08/11	13 20	0001	0.00							38		0.0
78/09/15	11 00	0001	0.00							36		0.0
78/10/20	11 00											0.0
79/04/04	11 00											0.0
79/04/09	11 00		0.00							49		0.0
79/06/08	11 00		0.00							43		
79/07/16	11 00		1.00							49		0.9
79/08/16	11 00		1.00							42		8.5
79/09/10	11 00		0.00							37		3.3
79/10/09	11 00		0.00							38		1.0

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
78/04/28	13 30	0001	0	8							
78/05/19	13 30	0001	0								
78/06/12	14 00	0001	0	8							
78/07/13	15 30	0001	20								
78/08/11	13 20	0001	0	5							
78/09/15	11 00	0001	0	3							
79/04/09	11 00		0	0							
79/06/08	11 00		0	0							
79/07/16	11 00		20	4							
79/08/16	11 00		0	9							
79/09/10	11 00		0	10							
79/10/09	11 00		0	9							

Analyses by Corps of Engineers.
Tables from STORET.

06441000 BAD RIVER NEAR MIDLAND, SD

LOCATION.--Lat 44°04'01", long 101°09'36", in NE¼NW¼ sec.7, T.1 N., R.25 E., Haakon County, Hydrologic Unit 10140102, on right bank at downstream side of bridge on State Highway 63, 0.4 mi (0.6 km) southwest of Midland, 2.0 mi (3.2 km) upstream from Mitchell Creek, and 3.7 mi (6.0 km) upstream from Ash Creek.

DRAINAGE AREA.--1,460 mi^2 (3,780 km^2), approximately.

PERIOD OF RECORD.--October 1945 to current year. Prior to February 1946 monthly discharge only, published in WSP 1309.

REVISED RECORDS.--WSP 2117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,849.14 ft (563.618 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 21, 1961, nonrecording gage, and Feb. 21, 1961, to June 14, 1967, water-stage recorder at site 4.2 mi (6.8 km) downstream at datum 15.72 ft (4.791 m) lower. June 15 to July 26, 1967, nonrecording gage at site 30 ft (9 m) upstream and July 27, 1967, to June 14, 1971, water-stage recorder at site 60 ft (18 m) upstream, both at present datum.

REMARKS.--Records poor. One observation of water temperature and specific conductance was made during the year. Only daily discharges above 100 ft^3/s (2.83 m^3/s) are being published.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,400 ft^3/s (833 m^3/s) June 15, 1967, gage height, 24.44 ft (7.449 m), from floodmarks, 20.10 ft (6.126 m), from floodmarks, at former site and datum, from rating curve extended above 16,000 ft^3/s (453 m^3/s); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 265 ft^3/s (7.50 m^3/s) June 3, gage height, 8.34 ft (2.542 m), no peak above base of 500 ft^3/s (14.2 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

Daily discharge, in cubic feet per second, above 100 ft^3/s are given herewith:

June 3 140

06441500 BAD RIVER NEAR FORT PIERRE, SD

LOCATION.--Lat 44°19'36", long 100°23'02", in NW¼NW¼ sec.10, T.4 N., R.31 E., Stanley County, Hydrologic Unit 10140102, on right bank at downstream side of highway bridge, 2.1 mi (3.4 km) south of Fort Pierre, 4.3 mi (6.9 km) downstream from Willow Creek, and 6.0 mi (9.7 km) upstream from mouth.

DRAINAGE AREA.--3,107 mi^2 (8,047 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to current year. Monthly discharge only for July 1932 to February 1934, published in WSP 1309.

REVISED RECORDS.--WSP 786: Drainage area. WSP 856: 1929(M), 1937.

GAGE.--Water-stage recorder. Datum of gage is 1,427.83 ft (435.203 m) National Geodetic Vertical Datum of 1929. Prior to July 10, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--52 years, 148 ft^3/s (4.191 m^3/s), 107,200 acre-ft/yr (132 hm^3/yr); median of yearly mean discharges, 98 ft^3/s (2.78 m^3/s), 71,000 acre-ft/yr (88 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,800 ft^3/s (1,240 m^3/s) June 18, 1967, gage height, 29.55 ft (9.007 m); no flow for long periods in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1927 reached a stage of 30.89 ft (9.415 m), from floodmarks, discharge, about 55,000 ft^3/s (1,560 m^3/s). Flood in July 1905 reached a stage about 2 ft (0.610 m) higher than that in April 1927.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,150 ft^3/s (60.9 m^3/s) at 2300 hours, July 5, gage height, 9.26 ft (2.822 m), no other peak above base of 2,000 ft^3/s (56.6 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	2.7	.00	64	.87	.00	.00
2	.00	.00	.00	.00	.00	.00	2.2	.00	82	.27	.00	.00
3	.00	.00	.00	.00	.00	.00	2.2	.00	4.4	.10	.00	.00
4	.00	.00	.00	.00	.00	.00	2.0	.00	.76	.10	.00	.00
5	.00	.00	.00	.00	.00	.00	1.8	.00	70	251	.00	.00
6	.00	.00	.00	.00	.00	.00	1.6	.00	164	636	.00	.00
7	.00	.00	.00	.00	.00	.00	1.4	.00	95	51	.00	.00
8	.00	.00	.00	.00	.00	.00	5.5	.00	68	38	.00	.00
9	.00	.00	.00	.00	.00	.00	3.6	.00	17	17	.00	.00
10	.00	.00	.00	.00	.00	.00	1.8	.00	21	6.2	.00	.00
11	.00	.00	.00	.00	.00	.00	1.3	.00	23	1.3	.00	.00
12	.00	.00	.00	.00	.00	.00	.99	.00	9.2	.80	.00	.00
13	.00	.00	.00	.00	.00	.00	.03	.00	3.6	.50	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	2.0	.30	.00	.00
15	.00	.00	.00	.00	.00	1.1	.00	.00	.66	.20	.00	.00
16	.00	.00	.00	.00	.00	6.6	.00	.00	.66	.10	.00	.00
17	.00	.00	.00	.00	.00	18	.00	.00	1.3	.00	.00	.00
18	.00	.00	.00	.00	.00	23	.00	.00	.99	.00	.00	.00
19	.00	.00	.00	.00	.00	22	.00	.00	.50	.00	.00	.00
20	.00	.00	.00	.00	.00	12	.00	.00	.25	.00	.00	.00
21	.00	.00	.00	.00	.00	5.6	.00	.00	.10	.00	.00	.00
22	.00	.00	.00	.00	.00	4.1	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	3.8	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	4.1	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	3.6	.04	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	3.0	.04	.00	9.0	.00	.00	.00
27	.00	.00	.00	.00	.00	2.5	.04	.00	372	.00	.00	.00
28	.00	.00	.00	.00	.00	2.2	.03	.00	51	.00	.00	.00
29	.00	.00	.00	.00	.00	2.5	.01	.00	7.0	.00	.00	.00
30	.00	.00	.00	.00	---	2.7	.00	.00	2.5	.00	.00	.00
31	.00	---	.00	.00	---	3.3	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	120.50	27.28	.00	1069.92	1003.74	.00	.00
MEAN	.000	.000	.000	.000	.000	3.89	.91	.000	35.7	32.4	.000	.000
MAX	.00	.00	.00	.00	.00	23	5.5	.00	372	636	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	239	54	.00	2120	1990	.00	.00

CAL YR 1979 TOTAL 13002.34 MEAN 35.6 MAX 2570 MIN .00 AC-FT 25790
WTR YR 1980 TOTAL 2221.44 MEAN 6.07 MAX 636 MIN .00 AC-FT 4410

06441500 BAD RIVER NEAR FORT PIERRE, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-53, 1972 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: October 1971 to current year.
WATER TEMPERATURES: October 1972 to current year.

REMARKS.--Records fair. No flow Oct. 1 to Mar. 14, Apr. 14-24, Apr. 30 to May 31, June 22-25, July 17 to Sept. 30. Sediment discharge records prior to Oct. 1, 1971, on file in the District office, Corps of Engineers, Omaha, NE.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 97,000 mg/L Apr. 21, 1974; minimum daily mean, 0 mg/L on many days each year.
SEDIMENT LOADS: Maximum daily, 783,000 tons (710,000 tonnes) May 2, 1972; minimum daily, 0 ton (0 tonne) on many days each year.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 13,000 mg/L June 6; minimum daily mean, 0 mg/L on many days.
SEDIMENT LOADS: Maximum daily, 9,310 tons (8,450 tonnes) July 6; minimum daily, 0 ton (0 tonne) on many days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.00	0	.00	.00	0	.00	.00	0	.00
2	.00	0	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.00	0	.00
5	.00	0	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	.00	0	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	.00	0	.00	.00	0	.00
16	.00	0	.00	.00	0	.00	.00	0	.00
17	.00	0	.00	.00	0	.00	.00	0	.00
18	.00	0	.00	.00	0	.00	.00	0	.00
19	.00	0	.00	.00	0	.00	.00	0	.00
20	.00	0	.00	.00	0	.00	.00	0	.00
21	.00	0	.00	.00	0	.00	.00	0	.00
22	.00	0	.00	.00	0	.00	.00	0	.00
23	.00	0	.00	.00	0	.00	.00	0	.00
24	.00	0	.00	.00	0	.00	.00	0	.00
25	.00	0	.00	.00	0	.00	.00	0	.00
26	.00	0	.00	.00	0	.00	.00	0	.00
27	.00	0	.00	.00	0	.00	.00	0	.00
28	.00	0	.00	.00	0	.00	.00	0	.00
29	.00	0	.00	.00	0	.00	.00	0	.00
30	.00	0	.00	.00	0	.00	.00	0	.00
31	.00	0	.00	---	---	---	.00	0	.00
TOTAL	0.00	---	0.00	0.00	---	0.00	0.00	---	0.00

06441500 BAD RIVER NEAR FORT PIERRE, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	.00	0	.00	.00	0	.00	.00	0	.00
2	.00	0	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.00	0	.00
5	.00	0	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	.00	0	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	.00	0	.00	1.1	160	.48
16	.00	0	.00	.00	0	.00	6.6	320	5.7
17	.00	0	.00	.00	0	.00	18	500	24
18	.00	0	.00	.00	0	.00	23	570	35
19	.00	0	.00	.00	0	.00	22	410	24
20	.00	0	.00	.00	0	.00	12	240	7.8
21	.00	0	.00	.00	0	.00	5.8	240	3.8
22	.00	0	.00	.00	0	.00	4.1	210	2.3
23	.00	0	.00	.00	0	.00	3.8	205	2.1
24	.00	0	.00	.00	0	.00	4.1	300	3.3
25	.00	0	.00	.00	0	.00	3.8	200	2.1
26	.00	0	.00	.00	0	.00	3.0	190	1.5
27	.00	0	.00	.00	0	.00	2.5	180	1.2
28	.00	0	.00	.00	0	.00	2.2	170	1.0
29	.00	0	.00	.00	0	.00	2.5	170	1.1
30	.00	0	.00	---	---	---	2.7	180	1.3
31	.00	0	.00	---	---	---	3.3	200	1.8
TOTAL	0.00	---	0.00	0.00	---	0.00	120.50	---	118.48
		APRIL			MAY			JUNE	
1	2.7	200	1.5	.00	0	.00	64	4450	769
2	2.2	190	1.1	.00	0	.00	82	8600	1900
3	2.2	190	1.1	.00	0	.00	4.4	1300	15
4	2.0	180	.97	.00	0	.00	.76	300	.62
5	1.8	180	.87	.00	0	.00	70	4710	890
6	1.6	170	.73	.00	0	.00	164	13000	5760
7	1.4	170	.64	.00	0	.00	95	10200	2620
8	5.5	500	7.4	.00	0	.00	68	8100	1490
9	3.6	380	3.7	.00	0	.00	17	3600	165
10	1.8	370	1.8	.00	0	.00	21	4200	238
11	1.3	350	1.2	.00	0	.00	23	4200	261
12	.99	300	.80	.00	0	.00	9.2	1400	35
13	.03	278	.02	.00	0	.00	3.6	700	6.8
14	.00	0	.00	.00	0	.00	2.0	800	4.3
15	.00	0	.00	.00	0	.00	.66	200	.36
16	.00	0	.00	.00	0	.00	.66	200	.36
17	.00	0	.00	.00	0	.00	1.3	300	1.1
18	.00	0	.00	.00	0	.00	.99	400	1.1
19	.00	0	.00	.00	0	.00	.50	300	.41
20	.00	0	.00	.00	0	.00	.25	150	.10
21	.00	0	.00	.00	0	.00	.10	50	.01
22	.00	0	.00	.00	0	.00	.00	0	.00
23	.00	0	.00	.00	0	.00	.00	0	.00
24	.00	0	.00	.00	0	.00	.00	0	.00
25	.04	10	.00	.00	0	.00	.00	0	.00
26	.04	10	.00	.00	0	.00	9.0	50	1.2
27	.04	10	.00	.00	0	.00	372	3600	3620
28	.03	10	.00	.00	0	.00	51	1100	151
29	.01	5	.00	.00	0	.00	7.0	200	3.8
30	.00	0	.00	.00	0	.00	2.5	100	.68
31	---	---	---	.00	0	.00	---	---	---
TOTAL	27.28	---	21.83	0.00	---	0.00	1069.92	---	17934.84

06441500 BAD RIVER NEAR FORT PIERRE, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	.67	50	.12	.00	0	.00	.00	0	.00
2	.27	30	.02	.00	0	.00	.00	0	.00
3	.10	10	.00	.00	0	.00	.00	0	.00
4	.10	10	.00	.00	0	.00	.00	0	.00
5	251	2680	1820	.00	0	.00	.00	0	.00
6	636	5420	9310	.00	0	.00	.00	0	.00
7	51	1000	138	.00	0	.00	.00	0	.00
8	38	500	51	.00	0	.00	.00	0	.00
9	17	300	14	.00	0	.00	.00	0	.00
10	6.2	200	3.3	.00	0	.00	.00	0	.00
11	1.3	100	.35	.00	0	.00	.00	0	.00
12	.60	50	.11	.00	0	.00	.00	0	.00
13	.50	40	.05	.00	0	.00	.00	0	.00
14	.30	20	.02	.00	0	.00	.00	0	.00
15	.20	10	.00	.00	0	.00	.00	0	.00
16	.10	5	.00	.00	0	.00	.00	0	.00
17	.00	0	.00	.00	0	.00	.00	0	.00
18	.00	0	.00	.00	0	.00	.00	0	.00
19	.00	0	.00	.00	0	.00	.00	0	.00
20	.00	0	.00	.00	0	.00	.00	0	.00
21	.00	0	.00	.00	0	.00	.00	0	.00
22	.00	0	.00	.00	0	.00	.00	0	.00
23	.00	0	.00	.00	0	.00	.00	0	.00
24	.00	0	.00	.00	0	.00	.00	0	.00
25	.00	0	.00	.00	0	.00	.00	0	.00
26	.00	0	.00	.00	0	.00	.00	0	.00
27	.00	0	.00	.00	0	.00	.00	0	.00
28	.00	0	.00	.00	0	.00	.00	0	.00
29	.00	0	.00	.00	0	.00	.00	0	.00
30	.00	0	.00	.00	0	.00	.00	0	.00
31	.00	0	.00	.00	0	.00	---	---	---
TOTAL	1003.74	---	11336.97	0.00	---	0.00	0.00	---	0.00
YEAR	2221.44		29412.12						

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
MAR											
17...	1420	7.9	2.0	565	12	--	--	--	--	--	--
19...	1425	--	3.0	269	--	--	95	97	100	--	--
24...	0930	4.2	1.0	356	4.0	--	--	--	--	--	--
25...	1425	--	4.5	200	--	--	97	99	100	--	--
29...	1530	--	5.5	173	--	--	60	97	100	--	--
APR											
13...	1430	--	14.0	278	--	62	--	--	--	--	--
25...	0920	.04	12.0	--	--	--	--	--	--	--	--
30...	1430	--	14.0	140	--	--	81	100	--	--	--
JUN											
01...	2040	--	21.0	6820	--	--	97	98	99	100	--
03...	1630	--	24.0	994	--	--	96	97	98	99	100
06...	1600	--	23.5	14400	--	--	100	--	--	--	--
11...	1730	--	27.0	2860	--	--	97	97	98	100	--
17...	1920	--	26.5	308	--	75	--	--	--	--	--

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
RANDOM INSTANTANEOUS

MAR 17	2.0	MAR 25	4.5	APR 13	14.0	APR 30	14.0	JUN 3	24.0	JUN 11	27.0
19	3.0	29	5.5	25	13.0	JUN 1	21.0	6	23.5	17	26.5
24	1.0										

06442000 MEDICINE KNOLL CREEK NEAR BLUNT, SD

LOCATION.--Lat 44°33'46", long 99°54'50", in NW¼ sec.31, T.113 N., R.75 W., Sully County, Hydrologic Unit 10140103, on left bank at downstream side of highway bridge, 4.8 mi (7.7 km) northeast of Blunt and 5.5 mi (8.8 km) upstream from South Fork Medicine Knoll Creek.

DRAINAGE AREA.--317 m^2 (821 km^2).

PERIOD OF RECORD.--March 1950 to current year. Prior to October 1959, published as Medicine Creek near Blunt.

REVISED RECORDS.--WRD SD-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,611.08 ft (491.057 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 31, 1950, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--30 years, 4.76 ft^3/s (0.135 m^3/s), 3,450 acre-ft/yr (4.25 hm^3/yr); median of yearly mean discharges, 0.86 ft^3/s (0.02 m^3/s), 620 acre-ft/yr (0.76 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,830 ft^3/s (51.8 m^3/s) Apr. 5, 1952, gage height, 12.34 ft (3.761 m), from floodmarks; maximum gage height, 13.2 ft (4.02 m) between Mar. 26-29, 1950, from floodmarks (backwater from ice); no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--No flow during year. No peak above base of 50 ft^3/s (1.42 m^3/s).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

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CAL YR 1979  TOTAL 211.14   MEAN .56    MAX 27      MIN  .00   AC-FT  419
WTR YR 1980  TOTAL   0.00   MEAN .000   MAX   .00   MIN  .00   AC-FT     .00
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06442500 MEDICINE CREEK AT KENNEBEC, SD

LOCATION.--Lat 43°54'17", long 99°52'35", in NW¼NE¼ sec.18, T.105 N., R.75 W., Lyman County, Hydrologic Unit 10140104, on right bank 4 ft (1 m) downstream from highway bridge, 0.5 mi (0.8 km) west of Kennebec and 0.5 mi (0.8 km) downstream from small right-bank tributary.

DRAINAGE AREA.--465 mi² (1,200 km²), approximately.

PERIOD OF RECORD.--July 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,659.64 ft (505.858 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 28, 1954, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--26 years, 14.5 ft³/s (0.411 m³/s), 10,510 acre-ft/yr (13.0 hm³/yr); median of yearly mean discharges, 6.4 ft³/s (0.18 m³/s), 4,600 acre-ft/yr (5.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,970 ft³/s (254 m³/s) Mar. 28, 1960, gage height, 16.71 ft (5.093 m); no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1952 reached a stage of 17.0 ft (5.18 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5.3 ft³/s (0.150 m³/s) Aug. 12, gage height, 1.45 ft (0.442 m), no peak above base of 100 ft³/s (2.83 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	1.3	.00
13	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.26	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.24	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.17	.00	.50	.00	1.30	.00
MEAN	.000	.000	.000	.000	.000	.000	.006	.000	.017	.000	.042	.000
MAX	.00	.00	.00	.00	.00	.00	.04	.00	.26	.00	1.3	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.3	.00	1.0	.00	2.6	.00

CAL YR 1979 TOTAL 1479.05 MEAN 4.05 MAX 304 MIN .00 AC-FT 2930
WTR YR 1980 TOTAL 1.97 MEAN .005 MAX 1.3 MIN .00 AC-FT 3.9

06442700 LAKE SHARPE NEAR FORT THOMPSON, SD

LOCATION.--Lat 44°02'18", long 99°26'45", in SE¼ sec.27, T.107 N., R.72 W., Lyman County, Hydrologic Unit 10140101, at left approach wall of powerhouse at Big Bend Dam on Missouri River, 2.5 mi (4.0 km) south of Fort Thompson, and at mile 987.4 (1,588.7 km).

DRAINAGE AREA.--249,300 mi² (645,700 km²), approximately.

PERIOD OF RECORD.--July 1963 to current year (monthend contents only).

CORRECTIONS.--The change in contents figure for Jan. 31, 1979, published in the SD 79-1 report is in error. The correct figure is +45,000 acre-ft.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earth-fill dam; closure made July 1963; intentional storage began November 1963. Maximum capacity, 1,900,000 acre-ft (2,340 hm³) below elevation, 1,423.0 ft (433.73 m), top of spillway gates. Normal maximum, 1,725,000 acre-ft (2,130 hm³) below elevation 1,420.0 ft (432.82 m). Inactive storage, 1,465,000 acre-ft (1,810 hm³) below elevation 1,415.0 ft (431.29 m). Figures given herein represent elevations at powerhouse and total contents adjusted for wind effect.

The spillway consists of a concrete chute with flat crest at elevation 1,385.0 ft (422.15 m) surmounted by 8 taintor gates, each 40 by 38 ft (12.2 X 11.6 m); design capacity, 390,000 ft³/s (11,000 m³/s). Normal releases are through 8 power units (completed in July 1966), with a generating capacity of 58,500 kilowatts each. Maximum release through powerplant about 100,000 ft³/s (2,830 m³/s). Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevation and contents furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,829,000 acre-ft (2,260 hm³) Apr. 22, 1971, elevation, 1,421.9 ft (433.40 m), affected by wind; minimum since initial filling, 1,448,000 acre-ft (1,790 hm³) Sept. 17, 1967, elevation, 1,414.7 ft (431.20 m), affected by wind.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,822,000 acre-ft (2,250 hm³) June 28, elevation, 1,421.54 ft (433.285 m); minimum contents, 1,697,000 acre-ft (2,090 hm³) Sept. 30, elevation, 1,419.57 ft (432.685 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation	Contents	Change in contents
Sept. 30	1420.70	1752000	
Oct. 31	1421.01	1784000	+32000
Nov. 30	1420.78	1773000	-11000
Dec. 31	1420.89	1783000	+10000
CAL YR 1979			+68000
Jan. 31	1420.56	1765000	-18000
Feb. 29	1420.28	1750000	-15000
Mar. 31	1420.56	1769000	+19000
Apr. 30	1420.19	1736000	-33000
May 31	1420.33	1747000	+11000
June 30	1420.51	1752000	+5000
July 31	1420.29	1748000	-4000
Aug. 31	1420.69	1765000	+17000
Sept. 30	1419.57	1697000	-68000
WTR YR 1980			-55000

NOTE.--Reservoir frozen over Feb. 1 to Apr. 6.

06442950 CROW CREEK NEAR GANN VALLEY, SD

LOCATION.--Lat 43°59'29", long 99°13'07", in NE¼NW¼ sec.15, T.106 N., R.70 W., Buffalo County, Hydrologic Unit 10140105, near center of span at downstream side of highway bridge, 6.4 mi (10.3 km) upstream from Smith Creek, 6.9 mi (11.1 km) downstream from Elm Creek, and 12.0 mi (19.3 km) southwest of Gann Valley.

DRAINAGE AREA.--670 mi² (1,740 km²), approximately.

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,434.73 ft (437.306 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

AVERAGE DISCHARGE.--9 years, 20.0 ft³/s (0.566 m³/s), 14,490 acre-ft/yr (17.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,900 ft³/s (110 m³/s) Mar. 22, 1978, gage height, 14.60 ft (4.450 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,720 ft³/s (48.7 m³/s) at 1000 hours, June 27, gage height, 11.80 ft (3.597 m), no other peak above base of 150 ft³/s (4.25 m³/s); no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.5	0	3.0	7.2	5.0	197
2.6	.57	3.2	15	7.0	517
2.7	1.6	3.5	33	10.0	1,130
2.8	3.1	4.0	75		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.4	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.43	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	29	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	935	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	55	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	5.2	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	3.3	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	1027.50	1.86	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	34.3	.060	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	935	1.4	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	2040	3.7	.00	.00

CAL YR 1979 TOTAL 1222.63 MEAN 3.35 MAX 185 MIN .00 AC-FT 2430
WTR YR 1980 TOTAL 1029.36 MEAN 2.81 MAX 935 MIN .00 AC-FT 2040

06445980 WHITE CLAY CREEK NEAR OGLALA, SD

LOCATION.--Lat 43°08'46", long 102°40'58", in SE¼SE¼ sec.30, T.37 N., R.45 W., Shannon County, Hydrologic Unit 10140201, on left bank at downstream side of bridge on U.S. Highway 18, 4.3 mi (6.9 km) southeast of Oglala, 5.5 mi (8.8 km) upstream from Oglala Dam, and 11 mi (18 km) northwest of Pine Ridge.

DRAINAGE AREA.--340 mi^2 (880 km^2), approximately.

PERIOD OF RECORD.--August 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,001.54 ft (914.869 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are poor. Some storage and possible regulation above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--15 years, 11.1 ft^3/s (0.314 m^3/s), 8,040 acre-ft/yr (9.91 hm^3/yr); median of yearly mean discharges, 9.2 ft^3/s (0.26 m^3/s), 6,700 acre-ft/yr (8.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 659 ft^3/s (18.7 m^3/s) June 16, 1967, gage height, 14.74 ft (4.493 m); maximum gage height, 15.02 ft (4.578 m) Mar. 11, 1966 (backwater from ice); no flow at times in 1965, 1970, 1973-75, 1978, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 186 ft^3/s (5.27 m^3/s) June 16, gage height, 10.80 ft (3.292 m); maximum gage height, 11.90 ft (3.627 m) Feb. 22 (backwater from ice); no other peak above base of 150 ft^3/s (4.25 m^3/s); no flow Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	14	9.5	7.5	3.5	60	18	15	14	7.8	4.7	.99
2	3.8	11	10	7.5	4.0	70	19	15	14	7.5	3.0	1.9
3	6.0	9.3	10	7.5	4.0	65	19	15	13	7.4	2.1	2.7
4	7.1	8.5	10	7.5	4.2	60	19	15	12	6.7	4.2	2.8
5	8.2	8.6	10	7.0	4.5	55	19	15	12	7.0	4.7	2.8
6	9.7	8.5	9.5	6.5	4.5	55	18	15	11	6.2	4.7	2.9
7	9.9	8.4	9.5	6.2	4.0	55	19	15	11	4.8	4.3	3.0
8	11	8.2	9.5	6.0	4.0	60	19	14	12	4.0	3.7	2.1
9	11	8.2	9.0	5.5	4.0	60	19	14	12	3.5	3.9	.35
10	12	8.0	9.0	6.0	4.0	55	19	14	11	3.2	4.3	.00
11	14	8.0	8.5	6.5	4.0	50	18	15	10	2.5	3.7	1.2
12	14	8.5	8.0	6.5	4.0	50	18	16	10	2.0	4.2	1.4
13	15	8.5	8.0	6.5	4.5	50	17	19	9.0	3.1	2.6	3.7
14	16	9.0	8.5	6.0	4.5	45	17	19	11	2.2	.57	3.7
15	16	9.0	8.0	6.0	4.5	40	17	18	75	1.9	1.2	3.9
16	17	9.0	7.0	6.0	4.0	35	17	17	147	2.0	1.7	3.7
17	17	9.5	7.5	5.5	4.5	30	17	16	89	2.0	1.1	3.7
18	18	9.5	8.0	5.5	5.0	26	17	16	47	1.8	.35	3.7
19	18	9.9	8.0	5.0	6.0	22	17	16	31	1.6	.64	3.7
20	19	9.7	7.5	5.0	6.0	20	17	16	24	4.9	1.3	3.6
21	19	9.0	7.5	5.5	30	19	16	15	23	6.3	1.9	1.4
22	20	9.0	7.5	5.5	90	18	16	15	20	7.4	3.3	2.7
23	20	9.0	7.5	5.5	85	18	15	14	16	6.9	3.3	3.2
24	20	9.5	8.0	5.5	80	17	15	13	14	9.3	2.8	3.4
25	12	9.5	8.0	5.0	78	17	15	12	13	9.0	2.2	3.5
26	7.2	9.5	7.5	4.5	76	16	15	11	12	8.6	2.1	3.3
27	7.8	9.0	7.0	4.0	75	16	15	11	11	7.9	3.0	3.3
28	9.0	9.0	7.0	3.5	70	17	15	11	9.6	6.9	3.1	3.3
29	11	9.0	7.0	3.0	65	18	16	11	8.6	6.0	3.2	3.1
30	14	9.5	7.0	3.5	---	19	15	11	8.0	5.6	2.0	3.0
31	15	---	7.5	3.5	---	18	---	13	---	4.9	2.1	---
TOTAL	401.2	275.3	256.5	174.7	736.7	1156	513	452	710.2	160.9	65.96	82.04
MEAN	12.9	9.18	8.27	5.64	25.4	37.3	17.1	14.6	23.7	5.19	2.77	2.73
MAX	20	14	10	7.5	90	70	19	19	147	9.3	4.7	3.9
MIN	3.5	8.0	7.0	3.0	3.5	16	15	11	8.0	1.6	.35	.00
AC-FT	796	546	509	347	1460	2290	1020	897	1410	319	171	163

CAL YR 1979 TOTAL 3431.70 MEAN 9.40 MAX 36 MIN .20 AC-FT 6810
WTR YR 1980 TOTAL 5004.50 MEAN 13.7 MAX 147 MIN .00 AC-FT 9930

06446000 WHITE RIVER NEAR OGLALA, SD

LOCATION.--Lat 43°15'17", long 102°49'29", in SW¼NE¼ sec.24, T.38 N., R.47 W., Shannon County, Hydrologic Unit 10140201, on right bank at downstream side of bridge, 3.0 mi (4.8 km) downstream from Blacktail Creek and 7.0 mi (11.3 km) northwest of Oglala.

DRAINAGE AREA.--2,200 mi² (5,700 km²), approximately.

PERIOD OF RECORD.--May 1943 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,853.54 ft (869.759 m) National Geodetic Vertical Datum of 1929. Prior to May 6, 1947, nonrecording gage at same site and datum.

REMARKS.--Records fair except those for winter periods, which are poor. Some diversions for irrigation above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--37 years, 53.7 ft³/s (1.521 m³/s), 38,910 acre-ft/yr (48.0 hm³/yr); median of yearly mean discharges, 44 ft³/s (1.25 m³/s), 31,900 acre-ft/yr (39 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,200 ft³/s (147 m³/s) June 21, 1947, gage height, 23.50 ft (7.163 m), from rating curve extended above 2,800 ft³/s (79.3 m³/s) on basis of velocity-area studies; maximum gage height, 23.61 ft (7.196 m) June 16, 1967; no flow at times in 1952, 1954, 1957, 1961, 1964, 1965, 1970-76.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 671 ft³/s (19.0 m³/s) June 16, gage height, 12.74 ft (3.883 m), no peak above base of 800 ft³/s (22.7 m³/s); minimum daily discharge, 1.1 ft³/s (0.031 m³/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	120	12	16	15	180	85	36	29	21	17	1.4
2	7.6	58	12	16	16	170	96	35	32	18	11	1.2
3	6.1	25	12	16	18	160	133	33	40	15	8.1	1.2
4	7.1	24	12	16	20	150	137	32	65	15	5.0	1.2
5	11	13	12	16	22	160	144	30	45	13	4.2	4.8
6	10	27	12	16	23	170	162	30	35	13	4.2	11
7	8.7	26	12	15	23	170	187	28	32	10	4.0	9.0
8	9.9	23	12	14	23	180	202	26	28	7.8	4.0	8.2
9	9.0	23	11	13	23	180	171	26	26	5.7	4.0	5.4
10	17	23	11	13	23	270	128	25	23	3.3	3.8	2.0
11	17	27	11	14	22	300	94	27	23	2.3	3.8	1.1
12	22	29	11	15	22	270	79	31	23	5.6	12	2.4
13	18	25	11	16	21	240	72	38	22	11	20	2.0
14	18	24	11	17	20	200	72	40	20	10	28	4.8
15	15	28	11	18	20	170	69	44	197	6.6	46	6.4
16	17	25	10	18	19	150	65	67	463	4.7	131	4.3
17	17	25	11	17	18	140	63	78	206	10	47	4.1
18	17	27	12	16	19	129	59	58	86	21	33	4.6
19	18	26	13	16	19	112	57	53	149	13	108	8.3
20	18	14	13	15	20	103	54	50	214	8.7	69	10
21	25	13	13	16	20	90	52	49	130	5.9	28	7.0
22	35	12	13	16	20	81	47	48	144	4.8	18	5.1
23	50	13	13	17	20	67	43	45	182	4.0	13	5.6
24	45	23	13	17	25	65	40	43	98	3.0	11	6.5
25	35	21	13	16	25	59	38	38	59	3.1	9.8	6.0
26	26	11	13	16	220	59	37	38	54	3.1	6.8	6.4
27	20	11	13	16	205	57	38	33	45	9.6	4.2	4.6
28	18	11	13	15	195	50	41	27	35	94	1.8	2.4
29	23	12	14	14	190	57	38	23	27	54	4.6	2.1
30	300	12	16	14	---	68	37	23	23	50	4.4	1.1
31	200	---	16	14	---	75	---	25	---	27	4.2	---
TOTAL	1045.3	751	382	484	1326	4332	2540	1179	2555	473.2	668.9	140.2
MEAN	33.7	25.0	12.3	15.6	45.7	140	84.7	38.0	85.2	15.3	21.6	4.67
MAX	300	120	16	18	220	300	202	78	463	94	131	11
MIN	4.9	11	10	13	15	50	37	23	20	2.3	1.8	1.1
AC-FT	2070	1490	758	960	2630	8590	5040	2340	5070	939	1330	278

CAL YR 1979 TOTAL 15171.7 MEAN 41.6 MAX 763 MIN 2.4 AC-FT 30090
WTR YR 1980 TOTAL 15876.6 MEAN 43.4 MAX 463 MIN 1.1 AC-FT 31490

06447000 WHITE RIVER NEAR KADOKA, SD

LOCATION.--Lat 43°45'09", long 101°31'28", in SE¼SE¼ sec.30, T.3 S., R.22 E., Black Hills meridian, Jackson County, Hydrologic Unit 10140202, near center of span on downstream side of bridge on State Highway 73, 5.0 mi (8.0 km) upstream from Pass Creek, 5.5 mi (8.8 km) downstream from Cottonwood Creek, and 5.8 mi (9.3 km) south of Kadoka.

DRAINAGE AREA.--5,000 mi^2 (13,000 km^2), approximately.

PERIOD OF RECORD.--July 1942 to current year.

REVISED RECORDS.--WSP 1279: 1944(M), 1948.

GAGE.--Water-stage recorder. Datum of gage is 2,122.18 ft (646.840 m) National Geodetic Vertical Datum of 1929. Prior to June 14, 1949, nonrecording gage, and June 14, 1949, to Mar. 8, 1955, water-stage recorder at site 0.3 mi (0.5 km) downstream at same datum. Mar. 9, 1955, to May 17, 1957, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods and those below 4.0 ft^3/s (0.113 m^3/s), which are poor. Some diversions above station for irrigation. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--38 years, 274 ft^3/s (7.760 m^3/s), 198,500 acre-ft/yr (245 hm^3/yr); median of yearly mean discharges, 260 ft^3/s (7.36 m^3/s), 188,000 acre-ft/yr (230 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,700 ft^3/s (615 m^3/s) June 7, 1951, gage height, 13.83 ft (4.215 m), site then in use, from rating curve extended above 16,000 ft^3/s (453 m^3/s); no flow at times in many years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 4, 1942, reached a stage of 16.24 ft (4.950 m) from floodmarks, discharge, about 32,000 ft^3/s (906 m^3/s), from rating curve extended above 16,000 ft^3/s (453 m^3/s). Floods of Mar. 8, 1905, and in spring of 1927 were 1 or 2 ft (0.3 or 0.6 m) higher than flood of June 4, 1942, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,540 ft^3/s (100 m^3/s) Aug. 16, gage height, 8.45 ft (2.576 m); maximum gage height, 9.64 ft (2.938 m) Feb. 27 (backwater from ice), no peak above base of 3,600 ft^3/s (102 m^3/s); no flow Oct. 7-17, Sept. 22-30.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 22-30, Mar. 13-28, Apr. 25 to June 15, Sept. 2-4; stage-discharge relation affected by ice Nov. 23 to Mar. 12)

3.5	0	3.7	6.6	4.0	40	4.5	136	6.0	940
3.6	1.4	3.8	15	4.2	70	5.0	326	7.0	1.780

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.23	637	50	30	35	250	531	58	55	40	15	3.5
2	.20	261	60	30	45	240	364	65	60	27	20	4.0
3	.15	145	64	30	50	220	569	55	106	57	24	1.3
4	.10	120	66	28	52	200	807	50	148	224	23	41
5	.05	95	66	27	52	190	980	45	99	90	20	44
6	.01	75	66	26	50	200	490	44	67	55	10	37
7	.00	71	64	25	47	200	331	41	333	36	6.1	25
8	.00	71	62	26	45	250	261	44	165	15	6.0	21
9	.00	52	60	30	45	300	232	45	101	5.6	6.6	16
10	.00	66	60	35	43	350	217	44	103	4.5	30	13
11	.00	60	55	40	40	500	278	45	80	5.6	144	12
12	.00	58	50	42	40	700	411	47	63	5.0	160	5.6
13	.00	60	45	43	38	735	623	88	50	4.5	71	5.6
14	.00	63	45	43	37	689	300	597	45	5.0	36	3.5
15	.00	79	40	42	37	562	244	442	164	6.0	24	2.4
16	.00	73	40	40	35	400	209	217	766	10	1210	1.9
17	.00	66	38	38	35	304	183	133	1100	20	1500	1.1
18	.50	66	40	37	35	269	160	125	933	14	624	.84
19	1.0	62	42	35	35	236	142	120	742	4.0	500	.42
20	3.0	57	44	33	35	224	120	128	549	3.5	400	.42
21	5.0	49	45	33	35	187	103	139	400	4.0	300	.10
22	27	48	45	35	37	180	106	108	280	4.5	200	.00
23	34	48	45	36	40	190	101	84	198	4.5	150	.00
24	115	48	40	36	45	230	77	75	240	22	100	.00
25	97	50	40	34	45	224	93	70	176	24	80	.00
26	62	52	40	32	42	136	70	65	139	4.5	50	.00
27	38	50	40	30	50	123	65	63	131	4.3	30	.00
28	26	48	37	29	100	126	71	55	99	4.0	20	.00
29	24	47	35	28	200	133	66	52	70	4.0	10	.00
30	740	47	35	27	---	166	54	48	51	4.0	7.0	.00
31	1600	---	33	30	---	729	---	48	---	10	4.0	---
TOTAL	2773.24	2724	1492	1030	1425	9443	8258	3240	7513	721.5	5780.7	239.68
MEAN	89.5	90.8	48.1	33.2	49.1	305	275	105	250	23.3	186	7.99
MAX	1600	637	66	43	200	735	980	597	1100	224	1500	44
MIN	.00	47	33	25	35	123	54	41	45	3.5	4.0	.00
AC-FT	5500	5400	2960	2040	2830	18730	16380	6430	14900	1430	11470	475

CAL YR 1979 TOTAL 86460.24 MEAN 237 MAX 4830 MIN .00 AC-FT 171500
WTR YR 1980 TOTAL 44640.12 MEAN 122 MAX 1600 MIN .00 AC-FT 88540

06447500 LITTLE WHITE RIVER NEAR MARTIN, SD

LOCATION.--Lat 43°10'00", long 101°37'47", in NW¼ sec.19, T.37 N., R.36 W., Bennett County, Hydrologic Unit 10140203, on right bank 70 ft (21 m) downstream from highway culvert and 5.4 mi (8.7 km) east of Martin.

DRAINAGE AREA.--310 mi² (803 km²), approximately, of which about 230 mi² (596 km²) probably contributes directly to surface runoff.

PERIOD OF RECORD.--February 1938 to September 1940, July 1962 to current year. Prior to October 1965, published as South Fork White River near Martin.

GAGE.--Water-stage recorder. Altitude of gage is 3,045 ft (928 m), by barometer. Prior to Aug. 14, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, and no gage-height record, Nov. 7-25, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--20 years, 19.2 ft³/s (0.544 m³/s), 13,910 acre-ft/yr (17.2 hm³/s); median of yearly mean discharges, 18 ft³/s (0.51 m³/s), 13,000 acre-ft/yr (16 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,190 ft³/s (33.7 m³/s) July 19, 1965, gage height, 12.90 ft (3.932 m), from rating curve extended above 340 ft³/s (9.63 m³/s) on basis of computation of peak flow through culvert and flow-over-road measurement of peak flow; maximum gage height, 13.21 ft (4.026 m) Mar. 11, 1966 (backwater from ice); minimum daily discharge, 0.6 ft³/s (0.017 m³/s) Aug. 14, 16, 18, 1940; no flow for part of each day Oct. 19, 20, 22, 1962, regulation caused by construction work above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 5, 1932, reached a stage of 13.3 ft (4.05 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 87 ft³/s (2.46 m³/s) Apr. 9, gage height, 3.41 ft (1.039 m); maximum gage height, 3.69 ft (1.125 m) Mar. 17 (backwater from ice), no peak above base of 100 ft³/s (2.83 m³/s); minimum daily discharge, 2.9 ft³/s (0.08 m³/s) Aug. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	13	9.5	8.0	5.5	10	35	19	14	6.9	3.9	4.8
2	6.3	14	10	8.0	6.0	11	35	19	13	6.7	3.5	4.6
3	6.9	12	11	7.5	6.0	11	41	18	12	6.4	3.4	4.9
4	7.0	11	12	7.5	6.5	12	44	18	12	6.0	3.1	5.1
5	7.0	9.7	12	7.0	7.0	12	46	18	11	5.7	3.0	5.1
6	7.0	6.8	12	7.0	7.0	12	56	17	10	5.3	3.1	5.3
7	7.2	6.5	11	6.5	6.5	13	73	17	11	4.9	2.9	5.5
8	7.2	6.5	11	6.5	6.5	14	79	16	12	4.6	3.0	5.6
9	7.4	6.0	12	7.0	6.5	14	65	16	13	4.7	3.7	5.6
10	7.4	6.0	12	7.0	6.5	15	66	17	11	4.6	4.5	5.9
11	7.4	6.5	11	7.5	6.5	15	51	17	11	4.4	4.9	6.3
12	7.4	7.0	11	8.0	6.0	15	46	18	10	4.2	5.1	6.8
13	7.4	7.0	11	8.0	6.0	16	43	21	9.6	4.4	5.5	7.9
14	7.5	8.0	10	8.0	5.5	16	40	29	9.1	4.5	5.5	7.5
15	7.5	10	10	7.5	5.5	20	38	28	9.1	4.5	5.3	8.1
16	7.6	10	10	7.0	6.0	25	36	25	9.1	4.7	6.5	8.4
17	7.6	9.5	10	7.0	7.0	45	35	23	9.9	4.6	6.6	8.7
18	7.8	9.0	11	7.0	10	52	34	22	11	4.4	6.6	9.4
19	7.8	9.0	11	7.0	11	56	33	21	10	4.2	6.0	9.7
20	7.8	8.5	11	6.5	12	49	31	19	9.8	4.1	6.0	10
21	8.3	8.5	10	6.5	12	47	29	18	10	4.3	6.0	11
22	8.7	9.0	9.5	6.6	12	32	27	16	15	4.3	5.9	11
23	9.5	9.0	9.0	6.6	11	28	24	15	28	4.5	5.2	12
24	9.1	10	9.0	6.6	11	27	23	14	19	5.1	5.1	12
25	9.1	15	9.5	6.5	11	26	22	13	12	4.6	4.9	12
26	8.7	19	9.5	6.0	11	26	21	12	9.3	4.8	4.9	12
27	8.4	17	9.5	5.5	11	26	21	12	8.3	4.6	4.7	13
28	8.1	11	9.0	5.5	11	28	21	11	7.7	4.8	4.7	13
29	8.1	10	9.0	5.0	10	30	21	11	7.2	4.6	4.6	13
30	9.1	9.5	8.5	5.0	---	29	20	11	7.1	4.6	4.6	14
31	11	---	8.5	5.0	---	27	---	15	---	4.4	4.7	---
TOTAL	243.8	294.0	319.5	210.3	239.5	759	1176	546	341.2	150.4	147.9	257.5
MEAN	7.86	9.80	10.3	6.78	8.26	24.5	39.2	17.6	11.4	4.85	4.77	8.58
MAX	11	19	12	8.0	12	56	85	29	28	6.9	6.6	14
MIN	6.3	6.0	8.5	5.0	5.5	10	20	11	7.1	4.1	2.9	4.8
AC-FT	484	583	634	417	475	1510	2330	1080	677	298	293	511

CAL YR 1979 TOTAL 6139.7 MEAN 16.8 MAX 129 MIN 6.0 AC-FT 12180
WTR YR 1980 TOTAL 4685.1 MEAN 12.8 MAX 85 MIN 2.9 AC-FT 9290

06449000 LAKE CREEK BELOW REFUGE, NEAR TUTHILL, SD

LOCATION.--Lat 43°08'46", long 101°30'38", in SW¼ sec.30, T.37 N., R.35 W., Bennett County, Hydrologic Unit 10140203, on left bank 400 ft (122 m) downstream from east boundary of LaCreek game refuge, 1.2 mi (1.9 km) southwest of Tuthill and 5.5 mi (8.8 km) upstream from mouth.

DRAINAGE AREA.--120 mi² (311 km²), approximately, of which about 60 mi² (155 km²) probably contributes directly to surface runoff.

PERIOD OF RECORD.--February 1938 to September 1940, July 1962 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,055 ft (931 m), by barometer. Prior to Aug. 4, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated by series of lakes above gage. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--20 years, 15.8 ft³/s (0.448 m³/s), 11,450 acre-ft/yr (14.1 hm³/yr); median of yearly mean discharges, 16 ft³/s (0.45 m³/s), 11,600 acre-ft/yr (14 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 178 ft³/s (5.04 m³/s) June 18, 1967, gage height, 5.17 ft (1.576 m); maximum gage height, 5.67 ft (1.728 m) Mar. 28, 1975 (backwater from ice); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 110 ft³/s (3.12 m³/s) Apr. 11, gage height, 4.39 ft (1.338 m); no flow for Aug. 26, 27.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 23 to Dec. 11, Dec. 14, 15, 17, Dec. 26 to Jan. 5, Jan. 8, 9, 12-23, Apr. 10-21, Sept. 26-30; stage-discharge relation affected by ice Nov. 9, 21, 22, Dec. 12, 13, 16, Jan. 6, 7, 10, 11)

0.80	0	1.1	1.0	1.7	12	3.0	58
.90	.12	1.2	2.0	2.0	20	4.0	108
1.0	.45	1.4	5.3	2.5	38		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	.15	50	14	10	29	17	45	15	1.2	2.9	.08
2	1.1	.11	50	15	10	29	19	38	15	1.2	2.8	.21
3	.81	.08	50	14	11	30	23	38	15	1.2	2.6	.17
4	.75	.08	50	14	11	30	24	38	15	.29	2.4	.25
5	.87	5.0	49	15	12	30	28	34	15	3.1	2.2	.43
6	.65	9.4	48	14	12	30	31	28	11	5.3	2.0	.10
7	.75	8.9	47	14	12	32	28	27	8.2	4.3	1.6	.34
8	.67	8.7	46	14	12	36	27	27	8.2	5.5	1.4	.31
9	.75	7.3	46	14	12	37	23	27	8.2	6.7	1.5	.18
10	.65	6.9	45	14	11	37	68	26	8.2	5.9	1.1	.43
11	.50	6.4	42	13	11	37	103	26	8.4	4.7	1.1	.40
12	3.0	6.5	40	13	11	36	96	26	8.0	4.2	1.3	.09
13	.27	6.4	40	12	11	37	92	26	7.6	3.5	1.3	.04
14	.27	6.4	36	12	11	37	72	26	7.7	2.8	1.4	.07
15	.12	6.5	37	12	11	37	54	26	7.1	2.9	1.1	.03
16	.93	9.6	34	11	11	35	51	26	7.1	3.1	.97	.29
17	.23	14	28	11	12	35	49	26	7.1	2.5	.67	.46
18	.31	17	24	11	15	35	49	26	7.1	1.7	.64	.49
19	.50	19	24	10	25	35	48	26	7.1	1.5	.49	.52
20	.31	19	24	10	25	35	48	26	7.1	1.3	.60	.35
21	.20	13	23	9.7	26	33	49	26	6.5	1.5	.68	.31
22	.20	16	23	11	30	20	50	25	2.4	1.9	.69	.36
23	.20	33	23	9.1	29	13	49	22	2.0	2.5	.22	.39
24	.31	42	23	8.7	30	14	49	19	1.7	2.2	.05	.44
25	.31	49	23	11	30	15	49	17	1.7	2.2	1.8	.80
26	.31	52	18	13	30	15	49	16	1.6	2.3	.00	.83
27	.18	48	14	12	29	16	49	16	1.3	2.3	.00	.78
28	.27	47	14	11	29	16	49	16	1.3	2.6	17	.88
29	.75	51	14	11	29	16	49	15	1.2	2.7	29	1.4
30	.31	51	14	10	---	16	49	15	1.2	2.6	.15	1.6
31	.18	---	14	9.0	---	16	---	15	---	2.9	.10	---
TOTAL	17.86	559.42	1013	372.5	518	869	1441	790	214.0	88.59	79.76	13.03
MEAN	.58	18.6	32.7	12.0	17.9	28.0	48.0	25.5	7.13	2.86	2.57	.43
MAX	3.0	52	50	15	30	37	103	45	15	6.7	29	1.6
MIN	.12	.08	14	8.7	10	13	17	15	1.2	.29	.00	.03
AC-FT	35	1110	2010	739	1030	1720	2860	1570	424	176	158	26

CAL YR 1979 TOTAL 10074.88 MEAN 27.6 MAX 65 MIN .08 AC-FT 19980
WTR YR 1980 TOTAL 5976.16 MEAN 16.3 MAX 103 MIN .00 AC-FT 11850

06449100 LITTLE WHITE RIVER NEAR VETAL, SD

LOCATION.--Lat 43°06'03", long 101°13'49", in NE¼NW¼ sec.17, T.36 N., R.33 W., Bennett County, Hydrologic Unit 10140203, on left bank 120 ft (37 m) downstream from highway bridge, 0.3 mi (0.5 km) downstream from small right-bank tributary, 10.8 mi (17.4 km) southeast of Vetal, and 15.3 mi (24.6 km) upstream from Spring Creek.

DRAINAGE AREA.--590 mi^2 (1,530 km^2), approximately, of which about 415 mi^2 (1,075 km^2) probably contributes directly to surface runoff.

PERIOD OF RECORD.--August 1959 to current year. Prior to October 1965, published as South Fork White River near Vetal.

GAGE.--Water-stage recorder. Datum of gage is 2,780.69 ft (847.554 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 14, 1959, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Some small diversions for irrigation and some storage in several small lakes above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--21 years, 53.4 ft^3/s (1.512 m^3/s), 38,690 acre-ft/yr (47.7 hm^3/yr); median of yearly mean discharges, 52 ft^3/s (1.47 m^3/s), 37,700 acre-ft/yr (46 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,330 ft^3/s (37.7 m^3/s) Mar. 13, 1966, gage height, 7.75 ft (2.362 m); minimum daily, 9.0 ft^3/s (0.25 m^3/s) Dec. 24, 25, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 163 ft^3/s (4.62 m^3/s) at 1000 hours, Apr. 13, gage height, 4.91 ft (1.497 m); maximum gage height, 5.50 ft (1.676 m) Mar. 2 (backwater from ice), no other peak above base of 150 ft^3/s (4.25 m^3/s); minimum daily discharge, 10 ft^3/s (0.28 m^3/s) July 21, 22, Aug. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	42	50	50	45	60	67	81	57	27	10	17
2	26	50	60	50	48	60	70	82	54	27	10	17
3	26	52	65	50	48	65	73	71	52	29	11	16
4	27	54	70	45	45	67	77	70	46	29	13	27
5	27	54	70	43	44	59	86	69	45	26	15	30
6	26	53	70	40	42	60	101	66	50	24	15	31
7	26	50	70	40	40	60	104	61	65	19	15	34
8	26	47	65	38	40	64	110	62	48	20	15	34
9	27	48	65	35	40	68	98	62	44	19	16	35
10	27	46	65	38	40	67	89	62	42	19	16	36
11	28	49	65	40	38	66	100	62	40	21	15	35
12	27	48	60	43	38	66	142	65	39	23	15	34
13	28	48	60	45	38	66	159	67	38	24	15	27
14	30	48	60	45	36	67	157	65	38	27	15	21
15	29	48	55	45	35	68	143	64	39	20	16	21
16	29	46	55	42	35	67	116	64	37	21	17	20
17	29	45	60	40	40	65	108	62	36	20	16	21
18	27	42	66	40	50	69	105	61	35	13	15	20
19	27	42	70	40	60	76	106	61	34	13	15	20
20	28	45	70	45	64	86	105	61	34	13	16	20
21	29	44	70	45	61	81	104	61	32	10	16	20
22	29	40	65	40	57	77	103	60	33	10	15	20
23	29	40	60	36	64	70	89	57	30	12	15	20
24	29	42	55	33	64	63	85	57	28	12	15	21
25	29	45	55	30	59	62	85	60	25	11	15	22
26	29	45	60	30	62	61	85	60	29	11	15	22
27	30	45	60	29	64	61	81	59	31	11	15	22
28	32	44	60	27	66	65	81	57	31	11	15	22
29	35	42	55	30	65	70	81	58	30	11	15	22
30	42	45	55	40	---	72	80	59	29	11	24	22
31	43	---	55	45	---	63	---	57	---	11	19	---
TOTAL	902	1389	1921	1239	1428	2071	2990	1963	1171	555	470	729
MEAN	29.1	46.3	62.0	40.0	49.2	66.8	99.7	63.3	39.0	17.9	15.2	24.3
MAX	43	54	70	50	66	86	159	82	65	29	24	36
MIN	26	40	50	27	35	59	67	57	25	10	10	16
AC-FT	1790	2760	3810	2460	2830	4110	5930	3890	2320	1100	932	1450

CAL YR 1979 TOTAL 22538 MEAN 61.7 MAX 176 MIN 23 AC-FT 44700
WTR YR 1980 TOTAL 16828 MEAN 46.0 MAX 159 MIN 10 AC-FT 33380

06449400 Rosebud Creek at Rosebud, SD

LOCATION.--Lat 43°14'14", long 100°51'26", in SW¼SW¼NE¼ sec.27, T.38 N., R.30 W., Todd County, Hydrologic Unit 10140203, on left bank 40 ft (12 m) upstream from bridge on Spotted Tail Lane in town of Rosebud, 0.4 mi (0.6 km) downstream from small right bank tributary, and 1.0 mi (1.6 km) downstream from Spotted Tail Dam.

DRAINAGE AREA.--50.8 mi^2 (132 km^2), approximately.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,531.91 ft (771.726 m) National Geodetic Vertical Datum of 1929. October 1963 to September 1970, low-flow partial-record station 0.26 mi^2 (0.42 km^2) upstream at different datum.

REMARKS.--Records fair. Flow regulated by Spotted Tail Dam and Indian Scout Lake, combined capacity, about 50 acre-ft (0.06 hm^3), and some small diversions for irrigation of Spotted Tail Golf Course above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--6 years, 7.12 ft^3/s (0.202 m^3/s), 5,160 acre-ft/yr (6.36 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 643 ft^3/s (18.2 m^3/s) July 27, 1976, gage height, 10.34 ft (3.152 m); minimum daily, 0.02 ft^3/s (0.001 m^3/s) June 13, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15 ft^3/s (0.42 m^3/s) Oct. 29, gage height, 4.06 ft (1.237 m); maximum gage height, 4.98 ft (1.518 m) Feb. 17 (backwater from ice); minimum daily discharge, 3.1 ft^3/s (0.088 m^3/s) July 30, Aug. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	7.8	5.5	6.3	7.5	6.5	8.1	7.6	6.9	5.1	3.3	5.5
2	4.4	7.5	6.0	6.0	8.0	6.5	8.4	7.7	6.0	5.1	3.3	5.5
3	4.6	7.2	7.0	6.5	8.5	6.7	9.3	7.5	5.8	5.3	3.3	5.2
4	4.7	7.2	7.5	6.8	9.0	6.7	9.4	7.5	6.3	5.2	3.1	4.5
5	5.0	7.0	7.5	6.9	9.0	7.0	10	7.4	7.1	5.0	3.3	4.2
6	5.1	7.0	7.5	7.0	9.2	7.6	9.8	7.9	7.0	4.9	3.6	4.2
7	5.2	7.2	7.7	6.5	9.0	7.5	8.9	8.7	7.4	4.5	3.8	4.0
8	5.0	7.2	7.5	6.5	8.6	7.6	8.3	9.4	6.6	5.2	4.2	4.0
9	5.1	7.0	7.8	6.0	8.5	7.9	8.5	9.7	6.7	4.7	6.5	4.0
10	5.5	7.8	7.6	6.0	9.0	7.9	8.2	9.6	6.1	3.9	5.2	4.0
11	5.6	7.5	5.2	6.5	8.5	8.0	8.3	8.2	5.9	3.6	5.0	4.0
12	5.4	7.2	6.6	7.0	8.5	7.8	8.0	9.0	5.4	3.5	4.5	3.8
13	5.5	7.2	7.2	7.5	8.5	7.7	8.2	9.2	5.5	3.6	4.7	4.2
14	5.6	7.5	7.0	7.5	8.0	7.8	8.2	7.8	5.9	3.7	5.5	4.2
15	5.7	7.5	7.0	7.7	8.0	7.9	8.0	7.3	7.1	3.6	8.7	4.2
16	5.4	7.5	7.0	7.9	8.0	7.9	8.2	7.6	7.2	3.3	7.0	3.6
17	6.0	7.2	7.5	8.0	8.5	7.6	8.4	7.5	7.5	3.3	4.7	4.0
18	6.1	7.2	8.5	7.6	9.0	7.5	8.4	7.4	6.5	3.2	4.7	3.6
19	6.4	7.5	7.0	7.6	10	7.5	8.6	6.9	6.6	3.4	5.5	3.8
20	6.2	7.8	6.8	7.5	9.8	7.2	8.2	6.8	6.3	3.7	5.7	3.8
21	7.8	6.8	6.6	7.5	8.8	7.0	8.2	6.6	5.7	3.8	5.2	3.8
22	6.9	6.0	6.5	7.5	8.1	7.0	7.9	6.4	5.7	3.5	4.7	3.2
23	6.6	6.0	6.3	8.0	8.0	6.9	7.7	6.1	5.3	3.7	5.0	3.4
24	6.5	5.5	6.2	8.0	8.1	6.8	7.8	6.4	4.7	3.6	4.5	3.4
25	6.7	5.5	6.5	8.5	7.8	6.8	7.9	6.4	4.7	3.6	4.5	3.2
26	7.0	5.1	6.1	8.5	8.2	7.2	8.1	6.2	4.9	3.8	4.5	3.4
27	6.4	5.1	6.1	8.0	8.3	7.3	8.1	6.3	5.0	3.7	4.5	3.2
28	6.4	5.1	5.8	8.0	7.7	8.1	8.0	6.1	4.3	3.5	4.3	3.6
29	8.9	5.0	6.3	7.5	6.5	7.8	7.9	7.6	4.7	3.5	4.3	3.6
30	12	5.0	6.3	7.5	---	7.3	7.3	8.1	5.1	3.1	4.5	3.6
31	11	---	5.9	7.0	---	7.9	---	7.2	---	3.2	5.0	---
TOTAL	193.0	202.1	210.0	225.3	244.6	228.9	250.3	234.1	179.9	122.8	146.6	118.7
MEAN	6.23	6.74	6.77	7.27	8.43	7.38	8.34	7.55	6.00	3.96	4.73	3.96
MAX	12	7.8	8.5	8.5	10	8.1	10	9.7	7.5	5.3	8.7	5.5
MIN	4.3	5.0	5.2	6.0	6.5	6.5	7.3	6.1	4.3	3.1	3.1	3.2
AC-FT	383	401	417	447	485	454	496	464	357	244	291	235

CAL YR 1979 TOTAL 2639.91 MEAN 7.23 MAX 59 MIN .04 AC-FT 5240
WTR YR 1980 TOTAL 2356.30 MEAN 6.44 MAX 12 MIN 3.1 AC-FT 4670

06449500 LITTLE WHITE RIVER NEAR ROSEBUD, SD

LOCATION.--Lat 43°19'32", long 100°53'00", in SW¼NW¼ sec.28, T.39 N., R.30 W., Todd County, Hydrologic Unit 10140203, on left bank at downstream side of bridge on U.S. Highway 18, 0.3 mi (0.5 km) downstream from Scabby Creek, 0.7 mi (1.1 km) downstream from Soldier Creek, and 6.4 mi (10.3 km) north of Rosebud.

DRAINAGE AREA.--1,020 mi² (2,640 km²), approximately, of which about 760 mi² (1,970 km²) probably contributes directly to surface runoff.

PERIOD OF RECORD.--May 1943 to current year. Prior to October 1965, published as South Fork White River near Rosebud.

REVISED RECORDS.--WSP 1056: 1943, drainage area. WSP 1309: 1946(M).

GAGE.--Water-stage recorder. Datum of gage is 2,294.99 ft (699.513 m) National Geodetic Vertical Datum of 1929. Prior to May 11, 1948, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Some small diversions for irrigation and some storage in several small lakes above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--37 years, 110 ft³/s (3.115 m³/s), 79,700 acre-ft/yr (98.3 hm³/yr); median of yearly mean discharges, 110 ft³/s (3.12 m³/s), 79,700 acre-ft/yr (98 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 246 ft³/s (6.97 m³/s) Apr. 13; maximum gage height, 7.65 ft (2.332 m) Nov. 28 (backwater from ice), no peak above base of 330 ft³/s (9.34 m³/s); minimum daily discharge, 30 ft³/s (0.85 m³/s) Jan. 28, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	115	85	65	45	100	154	118	129	60	47	82
2	67	108	90	65	50	100	168	114	122	57	48	79
3	74	111	100	60	60	110	176	118	114	62	50	64
4	64	114	100	60	60	100	161	112	118	55	43	73
5	76	112	95	55	60	90	189	118	118	58	46	76
6	73	108	90	55	58	90	216	108	108	54	46	89
7	71	110	90	50	58	95	202	102	154	49	73	98
8	78	107	85	50	55	95	208	98	122	62	50	81
9	82	101	80	50	55	90	216	95	118	62	65	76
10	82	97	75	55	55	85	200	98	91	61	65	89
11	64	101	70	55	55	80	169	108	89	58	64	74
12	84	103	75	60	53	75	222	115	76	55	62	84
13	71	101	80	60	53	70	246	120	95	52	60	81
14	79	104	80	65	50	67	231	126	65	58	58	84
15	86	105	75	60	50	66	234	129	82	61	76	78
16	81	105	70	60	60	70	202	118	200	52	60	71
17	86	104	90	55	70	68	189	131	150	55	65	84
18	93	107	135	55	100	71	176	108	100	54	57	84
19	93	101	130	60	130	84	163	122	80	49	67	89
20	78	100	125	60	145	108	154	131	75	50	79	79
21	84	95	115	65	150	118	156	122	70	54	65	84
22	70	95	105	70	140	114	156	118	65	52	71	89
23	60	90	100	75	140	98	144	110	65	50	68	70
24	62	95	90	70	130	108	129	129	60	57	67	76
25	76	100	85	60	130	110	122	118	60	52	70	79
26	81	95	80	45	120	102	129	122	84	57	65	74
27	88	95	80	35	120	118	110	120	70	52	70	70
28	86	95	75	30	120	140	129	116	91	48	70	65
29	95	90	75	30	110	135	122	129	58	46	71	91
30	126	90	70	35	---	140	108	118	89	46	78	86
31	129	---	70	40	---	151	---	122	---	43	97	---
TOTAL	2499	3054	2765	1710	2482	3050	5201	3613	2918	1681	1973	2399
MEAN	80.6	102	89.2	55.2	85.6	98.4	173	117	97.3	54.2	63.6	80.0
MAX	129	115	135	75	150	151	246	131	200	62	97	98
MIN	60	90	70	30	45	67	108	95	58	43	43	64
AC-FT	4960	6060	5480	3390	4920	6050	10320	7170	5790	3330	3910	4760

CAL YR 1979 TOTAL 43157 MEAN 118 MAX 845 MIN 52 AC-FT 85600
WTR YR 1980 TOTAL 33345 MEAN 91.1 MAX 246 MIN 30 AC-FT 66140

06450500 LITTLE WHITE RIVER BELOW WHITE RIVER, SD

LOCATION.--Lat 43°36'04", long 100°44'52", in SW¼NW¼ sec.23, T.42 N., R.29 W., Mellette County, Hydrologic Unit 10140203, on left bank at downstream side of bridge on U.S. Highway 83, 1.3 mi (2.1 km) downstream from Pine Creek and 2.0 mi (3.2 km) north of town of White River.

DRAINAGE AREA.--1,570 mi² (4,070 km²), approximately, of which about 1,310 mi² (3,390 km²) probably contributes directly to surface runoff.

PERIOD OF RECORD.--October 1949 to current year. Prior to October 1965, published as South Fork White River below White River.

GAGE.--Water-stage recorder. Datum of gage is 1,912.78 ft (583.015 m) National Geodetic Vertical Datum of 1929. Prior to June 8, 1968, at site 0.8 mi (1.3 km) downstream at datum 4.50 ft (1.372 m) lower.

REMARKS.--Records good except those for winter periods, which are poor. Diurnal fluctuations caused by small powerplant 2.2 mi (3.5 km) upstream. Several small diversions for irrigation and some storage in several small lakes above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--31 years, 129 ft³/s (3.653 m³/s), 93,460 acre-ft/yr (115 hm³/yr); median of yearly mean discharges, 130 ft³/s (3.68 m³/s), 94,200 acre-ft/yr (116 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,700 ft³/s (388 m³/s) June 12, 1967, gage height, 10.02 ft (3.054 m), site and datum then in use; maximum gage height, 11.21 ft (3.417 m) June 7, 1968, site and datum then in use; maximum gage height at present site and datum, 15.46 ft (4.712 m) June 7, 1968, from floodmarks; no flow for parts of several days in 1952, 1954, 1956; minimum daily discharge, 7 ft³/s (0.20 m³/s) July 31, Aug. 31, Sept. 1, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 1,970 ft³/s (55.8 m³/s) June 16, gage height, 5.90 ft (1.798 m); maximum gage height observed, 5.92 ft (1.804 m) Mar. 8 (backwater from ice); minimum daily discharge, 25 ft³/s (0.71 m³/s) July 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	62	91	80	35	130	204	166	92	46	26	66
2	124	49	85	80	45	130	216	186	130	56	36	56
3	92	55	95	75	55	135	237	160	122	59	36	96
4	81	53	100	75	60	135	231	156	115	41	36	100
5	79	55	105	70	65	125	241	178	122	56	34	96
6	81	53	105	70	65	120	254	178	118	66	34	85
7	81	46	100	65	65	120	243	170	115	41	36	89
8	86	57	95	60	60	120	230	167	138	53	46	100
9	84	38	95	55	60	110	214	178	166	53	130	115
10	86	38	90	60	60	110	223	186	69	63	92	122
11	86	64	84	65	60	105	219	142	85	59	69	118
12	90	64	74	65	58	100	162	166	107	53	66	72
13	90	62	75	70	58	95	232	154	89	56	63	115
14	97	44	80	70	58	95	219	130	100	51	69	115
15	94	42	85	70	56	90	227	126	85	43	66	122
16	97	46	85	70	55	95	198	118	717	51	122	116
17	97	48	80	65	55	100	190	126	374	41	107	111
18	89	51	65	65	60	116	153	104	104	36	111	92
19	91	67	100	60	80	134	182	107	92	48	104	79
20	91	57	130	60	102	131	198	111	89	46	126	75
21	89	55	130	60	120	140	190	171	85	63	92	75
22	86	76	120	60	140	142	210	156	79	46	85	69
23	76	79	110	60	150	146	186	154	75	43	59	66
24	76	89	105	60	150	151	163	138	66	43	59	79
25	86	97	100	55	140	141	163	126	63	46	59	115
26	86	79	100	50	140	149	163	154	66	25	72	89
27	86	84	95	45	130	160	139	150	59	31	84	122
28	97	84	90	40	125	163	198	103	56	36	96	118
29	86	84	90	35	125	182	186	156	41	28	92	82
30	130	86	85	35	---	181	190	95	51	28	92	66
31	104	---	85	33	---	190	---	118	---	34	59	---
TOTAL	2825	1864	2929	1883	2432	4061	6081	4554	3690	1441	2258	2823
MEAN	91.1	62.1	94.5	60.7	83.9	131	203	147	123	46.5	72.8	94.1
MAX	130	97	130	80	150	190	254	186	717	66	130	122
MIN	76	38	65	33	35	90	139	95	41	25	26	56
AC-FT	5600	3700	5810	3730	4820	8050	12060	9030	7320	2860	4480	5600

CAL YR 1979 TOTAL 51005 MEAN 140 MAX 2070 MIN 25 AC-FT 101200
WTR YR 1980 TOTAL 36841 MEAN 101 MAX 717 MIN 25 AC-FT 73070

06452000 WHITE RIVER NEAR OACOMA, SD

LOCATION.--Lat 43°44'54", long 99°33'22", in SE¼SW¼ sec.3, T.103 N., R.73 W., Lyman County, Hydrologic Unit 10140204, on left bank at downstream side of bridge on State Highway 47, 1.5 mi (2.4 km) downstream from Wagner Draw, 1.8 mi (2.9 km) upstream from high-water line of Lake Francis Case, and 8.8 mi (14.2 km) southwest of Oacoma.

DRAINAGE AREA.--10,200 mi^2 (26,400 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to current year.

REVISED RECORDS.--WSP 786: Drainage area. WSP 1309: 1929-30(M).

GAGE.--Water-stage recorder. Datum of gage is 1,377.29 ft (419.798 m) National Geodetic Vertical Datum of 1929. See WSP 1709, 1729, or 1917 for history of changes prior to Feb. 27, 1960.

REMARKS.--Records good except those for winter periods, which are poor. Some diversions for irrigation above station. Gage-height telemeter at station.

AVERAGE DISCHARGE.--52 years, 524 ft^3/s (14.84 m^3/s), 379,600 acre-ft/yr (468 hm^3/yr); median of yearly mean discharges, 450 ft^3/s (12.7 m^3/s), 326,000 acre-ft/yr (400 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,900 ft^3/s (1,470 m^3/s) Mar. 30, 1952, gage height, 15.40 ft (4.694 m), site and datum then in use; maximum gage height, 23.59 ft (7.190 m) Mar. 14, 1978, ice jam; no flow Aug. 14-28, 1971, July 16-23, 1974, Aug. 29 to Sept. 9, Sept. 13, 1976, July 23 to Aug. 7, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,750 ft^3/s (49.6 m^3/s) Aug. 19, gage height, 5.81 ft (1.771 m); maximum gage height observed, 5.98 ft (1.823 m) Mar. 10 (backwater from ice), no peak above base of 5,500 ft^3/s (156 m^3/s); no flow July 23 to Aug. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	165	50	37	30	50	340	212	154	177	.00	80
2	33	334	55	35	35	200	322	205	225	174	.00	95
3	30	983	60	35	45	295	331	202	288	156	.00	120
4	30	669	66	33	55	280	804	190	240	120	.00	76
5	29	524	70	31	56	250	776	183	199	90	.00	66
6	30	414	70	30	55	230	627	177	162	78	.00	57
7	26	322	75	30	55	220	1060	156	144	66	.00	40
8	25	225	75	30	55	230	1220	145	350	64	.20	30
9	26	200	70	28	52	230	1070	137	313	307	.70	14
10	27	170	70	30	50	250	753	135	271	284	15	7.5
11	30	170	65	35	50	300	608	130	419	226	60	5.4
12	33	150	65	40	45	350	566	122	336	110	35	6.0
13	37	170	60	45	45	500	512	120	284	85	206	32
14	35	170	55	48	43	1000	478	132	233	64	132	45
15	40	200	55	48	41	1400	472	127	219	30	101	55
16	44	180	50	47	40	1460	608	113	215	26	171	37
17	44	154	45	45	40	1270	792	115	226	19	190	49
18	45	140	47	43	40	1060	590	113	215	11	267	45
19	47	127	50	40	38	856	435	380	215	1.6	912	29
20	45	120	50	40	38	676	400	279	802	2.0	1140	27
21	53	110	50	40	40	648	369	240	904	3.2	896	25
22	58	100	50	41	45	560	336	215	746	.00	641	23
23	57	90	50	42	50	489	322	180	697	.00	483	22
24	57	80	48	42	52	467	304	168	554	.00	398	23
25	57	70	45	40	52	435	292	156	768	.00	259	23
26	60	60	45	37	50	419	267	156	676	.00	189	37
27	58	60	45	34	50	398	260	165	393	.00	151	27
28	55	56	43	32	48	379	252	156	275	.00	120	27
29	53	54	42	30	48	363	237	156	240	.00	97	27
30	68	50	40	30	---	379	226	151	215	.00	86	23
31	129	---	40	30	---	369	---	151	---	.00	80	---
TOTAL	1398	6317	1701	1148	1343	16053	15649	5267	10978	2094.60	6629.90	1172.9
MEAN	45.1	211	54.9	37.0	46.3	518	522	170	366	67.6	214	39.1
MAX	129	983	75	48	56	1460	1220	380	904	307	1140	120
MIN	25	50	40	28	30	50	226	113	144	.00	.00	5.4
AC-FT	2770	12530	3370	2280	2660	31840	31040	10450	21770	4150	13150	2330

CAL YR 1979 TOTAL 164398.00 MEAN 450 MAX 6740 MIN 10 AC-FT 326100
WTR YR 1980 TOTAL 69751.40 MEAN 191 MAX 1460 MIN .00 AC-FT 138400

06452000 WHITE RIVER NEAR OACOMA, SD--Continued
(National stream-quality accounting network station)
(National pesticide water-monitoring network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-53, 1969, 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1976, October 1977 to current year.
WATER TEMPERATURES: October 1974 to September 1976, October 1978 to current year.
SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1976 (discontinued).

REMARKS.--No flow July 25 to August 7.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,950 micromhos Aug. 8, 1980; minimum daily, 370 micromhos Mar. 17, 1975.
WATER TEMPERATURES: Maximum daily, 30.0°C July 30, 1975, July 10, 1976, July 10, 1980; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 72,300 mg/L Apr. 15, 1974; minimum daily mean, 0 mg/L July 17-23, 1974, Aug. 29 to Sept. 9, Sept. 13, 1976.
SEDIMENT LOADS: Maximum daily, 1,220,000 tons (1,110,000 tonnes) May 29, 1973; 0 ton (0 tonne) July 17-23, 1974, Aug. 29 to Sept. 9, Sept. 13, 1976.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,950 micromhos Aug. 8; minimum daily, 410 micromhos Nov. 16.
WATER TEMPERATURES: Maximum daily, 30.0 July 10; minimum daily, 0.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT 10...	1140	28	760	8.5	6.0	34	10.0	K15	K30	160	0	51
NOV 08...	1130	225	480	8.3	.0	7300	14.7	2400	3200	42	0	13
DEC 04...	1220	66	750	8.7	.0	120	14.2	K2	K18	160	0	53
JAN 07...	1200	30	820	8.2	.0	60	17.2	ND	K11	220	0	73
FEB 05...	1130	56	850	8.2	.0	5.9	15.4	K2	ND	240	0	77
MAR 03...	1140	295	445	8.2	.0	160	14.3	K2	K40	120	0	38
APR 16...	1400	625	520	7.6	11.5	2300	--	ND	K110	69	0	24
MAY 16...	0830	119	530	8.0	13.5	100	9.0	K50	K40	130	0	44
JUN 12...	0910	338	671	8.1	21.5	5600	7.5	8670	2870	96	0	32
JUL 10...	1230	263	780	8.3	30.0	1000	7.0	6800	4060	48	0	17
SEP 04...	1330	75	355	8.3	20.5	760	8.7	K13	K9	53	0	19

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT 10...	7.0	84	52	2.9	9.6	94	200	140	8.7	.5	44	449
NOV 08...	2.2	110	83	7.4	4.8	110	180	51	11	.5	26	765
DEC 04...	7.1	100	60	3.4	8.4	110	250	120	9.3	.6	53	496
JAN 07...	9.7	98	52	2.9	11	110	300	110	9.6	.7	62	554
FEB 05...	12	92	44	2.6	14	110	290	140	10	.5	60	577
MAR 03...	5.8	53	48	2.1	5.0	58	160	69	6.5	.4	37	304
APR 16...	2.2	92	72	4.8	5.6	--	170	86	5.8	.5	35	351
MAY 16...	5.3	64	50	2.4	7.8	--	180	88	13	.6	40	366
JUN 12...	3.8	100	67	4.5	9.7	--	180	140	7.9	.5	31	440
JUL 10...	1.3	140	85	8.8	4.5	--	130	180	9.2	.8	26	489
SEP 04...	1.4	120	80	7.2	8.4	--	150	160	18	.7	34	436

K Non-ideal colony count.

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 10...	465	.61	34.3	--	.01	.01	.01	.01	.01	.01	.36	.41
NOV 08...	332	1.04	473	--	1.3	1.4	.06	.08	.43	.52	.51	7.0
DEC 04...	506	.67	91.2	--	1.0	1.2	.04	.05	.03	.04	1.5	1.4
JAN 07...	557	.75	7.33	--	.60	.58	.01	.01	.04	.05	1.3	1.5
FEB 05...	585	.78	87.6	--	1.1	.98	.02	.03	.00	.00	.65	.70
MAR 03...	312	.41	242	--	.33	.33	.01	.01	.04	.05	.13	.43
APR 16...	357	.48	592	4810	.69	.67	.00	.00	.02	.02	.80	2.7
MAY 16...	371	.50	118	--	.12	.14	.08	.10	.01	.01	1.3	1.2
JUN 12...	437	.60	402	13400	.80	1.0	.00	.00	.08	.10	1.8	12
JUL 10...	462	.67	347	16400	.99	1.3	.08	.10	.12	.15	.76	15
SEP 04...	452	.59	88.4	4080	.07	2.9	.00	.00	.10	.12	2.1	3.3

DATE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, ORTHOPHOSPHATE TOTAL (MG/L AS P) (70507)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P) (00673)	PHOSPHORUS, HYDRO. + ORTHO DISSOL. (MG/L AS P) (00677)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)
OCT 10...	.37	.05	.42	.38	.43	1.9	--	--	--	.020	.090
NOV 08...	.57	6.8	7.4	1.9	8.8	39	--	--	--	.300	9.800
DEC 04...	1.5	.00	1.4	2.5	2.6	12	--	--	--	.100	.120
JAN 07...	1.3	.20	1.5	1.9	2.1	9.2	--	--	--	.170	.200
FEB 05...	.67	.03	.70	1.6	1.7	7.4	--	--	--	.130	.180
MAR 03...	.14	.33	.47	.47	.80	3.5	--	--	--	.090	.310
APR 16...	.80	1.9	2.7	1.5	3.4	15	.16	--	--	.100	4.500
MAY 16...	1.4	.00	1.2	1.5	1.3	5.9	--	--	--	.020	.250
JUN 12...	1.8	10	12	2.6	13	58	.22	--	--	.040	.500
JUL 10...	.84	14	15	1.8	16	72	.12	--	--	.090	24.000
SEP 04...	2.1	1.3	3.4	2.2	6.3	28	.09	--	--	.040	3.400

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)
OCT											
10...	.26	--	13	.3	--	--	.240	.160	.000	.000	--
NOV											
08...	30	--	--	--	15	--	--	--	--	--	--
DEC											
04...	.37	--	--	--	12	280	--	--	--	--	--
JAN											
07...	.61	--	18	.2	--	--	--	--	--	--	--
FEB											
05...	.55	--	--	--	8.9	--	--	--	--	--	--
MAR											
03...	.95	--	--	--	7.0	--	--	--	--	--	--
APR											
16...	14	.49	7.7	13	--	2800	--	--	--	--	--
MAY											
16...	.77	--	--	--	10	--	--	--	--	--	--
JUN											
12...	1.5	.67	--	--	96	--	--	--	--	--	--
JUL											
10...	74	.37	--	--	130	--	--	--	--	--	--
SEP											
04...	10	.28	--	--	25	--	--	--	--	--	--

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT												
10...	1140	28	2680	205	--	--	--	--	19	23	47	98
NOV												
08...	1130	225	18600	11500	--	95	98	--	100	--	--	--
DEC												
04...	1220	66	424	78	92	--	--	--	--	--	--	--
JAN												
07...	1200	30	168	2.2	76	--	--	--	--	--	--	--
FEB												
05...	1130	56	139	21	--	--	--	--	52	74	99	100
MAR												
03...	1140	295	427	340	--	--	--	--	97	99	100	--
APR												
16...	1400	625	7370	12400	--	68	72	89	97	97	98	100
MAY												
16...	0830	119	330	106	--	85	87	89	91	--	--	--
JUN												
12...	0910	338	25900	23600	--	65	74	87	89	89	89	93
JUL												
10...	--	--	28300	--	--	66	78	96	99	--	--	--
10...	1230	263	--	--	--	--	--	--	--	--	--	--
SEP												
04...	1330	75	6550	1330	--	93	97	98	99	--	--	--

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT 10...	1140	10	0	10	0	0	<1	10	10	0	0
JAN 07...	1200	12	0	12	0	0	<1	0	0	0	0
APR 16...	1400	18	8	10	0	0	0	60	60	0	21
JUL 10...	1230	90	73	17	6	6	0	180	180	0	52

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
OCT 10...	0	<3	3	0	3	1100	<10	0	0	0	60
JAN 07...	0	<3	0	0	0	850	30	7	7	0	40
APR 16...	21	0	70	65	5	60000	40	55	51	4	2200
JUL 10...	51	1	250	240	8	140000	70	330	330	0	7800

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT 10...	60	4	4.7	3.8	.9	1	0	1	10	5	5
JAN 07...	0	40	.0	.0	.0	2	0	2	--	--	7
APR 16...	2200	10	.2	.2	.0	4	2	2	260	220	40
JUL 10...	7800	10	.8	.8	.0	16	11	5	670	660	10

DATE	TIME	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)
OCT 16...	1140	ND	--	ND	--	ND	--	ND	--	ND	--
NOV 08...	1130	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 05...	1130	ND	--	ND	--	ND	--	ND	--	ND	--

DATE	DI-AZINON, TOTAL (UG/L) (39570)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)
OCT 16...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
NOV 08...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 05...	ND	--	ND	--	ND	--	ND	--	ND	--	ND

< Less than.
ND Not detected.

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL TRITHION, TOTAL (UG/L) (39790)
OCT 16...	--	ND	--	ND	--	ND	--	ND	--	ND
NOV 08...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 05...	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	PARATHION, TOTAL (UG/L) (39540)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)
OCT 16...	--	ND	--	ND	--	ND	--	--	--	--
NOV 08...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 05...	--	ND	--	ND	--	ND	--	--	--	--

ND Not detected.

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 6,79	SEP 11,79	DEC 4,79	APR 16,80	MAY 16,80
TIME	1100	0915	1220	1400	0830
TOTAL CELLS/ML	27	3700	280	2800	74000
DIVERSITY: DIVISION	1.0	0.8	1.0	1.7	0.8
.CLASS	1.0	0.8	1.0	1.7	0.8
..ORDER	1.0	0.8	1.8	2.0	0.9
...FAMILY	1.0	1.8	2.7	2.3	1.7
....GENUS	1.0	2.2	3.0	2.3	2.9

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...HYDRODICTYACEAE										
....PEDIASTRUM	--	-	400	11	40	14	--	-	2100	3
...OOCYSTACEAE										
....ANKISTRODESMUS	--	-	--	-	5	2	410	15	1000	1
....CHLORELLA	--	-	500	14	--	-	--	-	*	0
....CHODATELLA	--	-	--	-	--	-	--	-	1000	1
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	5400	7
....GLOEOACTINIUM	--	-	--	-	10	4	--	-	--	-
....OOCYSTIS	--	-	--	-	5	2	--	-	2800	4
....SELENASTRUM	--	-	--	-	--	-	--	-	5700	8
....TREUBARIA	--	-	--	-	--	-	--	-	*	0
...SCENEDESMACEAE										
....ACTINASTRUM	--	-	500	14	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-	4100	6
....SCENEDESMUS	--	-	1700#	46	20	7	--	-	29000#	39
....TETRASTRUM	--	-	--	-	40	14	--	-	9300	13
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	--	-	--	-	15	5	140	5	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	200	5	80#	29	--	-	2100	3
....MELOSIRA	--	-	--	-	--	-	140	5	520	1
..PENNALES										
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	10	4	--	-	--	-
...NAVICULACEAE										
....NAVICULA	--	-	--	-	30	11	280	10	--	-
...NITZSCHIACEAE										
....NITZSCHIA	14#	50	--	-	25	9	140	5	1000	1
...SURIRELLACEAE										
....SURIRELLA	--	-	--	-	--	-	140	5	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	140	5	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	--	-	--	-	--	-	9300	13
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	400	11	--	-	--	-	--	-
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	--	-	--	-	1400#	50	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....TRACHELOMONAS	14#	50	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	610	460	680	590	670	460	515	720	---	685	---	---
2	690	890	---	560	750	---	510	710	610	650	---	560
3	630	720	700	---	---	445	515	660	670	705	---	580
4	630	---	750	640	750	500	530	---	600	---	---	355
5	650	550	670	650	650	500	515	660	580	700	---	670
6	640	520	630	670	620	445	---	660	730	---	---	590
7	---	490	680	820	620	440	535	670	700	750	---	---
8	650	480	670	730	590	430	470	750	---	720	1950	600
9	640	470	---	966	590	---	480	650	700	720	1750	580
10	760	480	485	1040	---	500	475	700	620	780	1750	580
11	610	---	490	1040	505	482	465	---	740	890	---	605
12	570	490	560	1100	520	520	500	730	671	880	1650	545
13	560	510	560	---	515	480	---	710	800	---	1220	555
14	---	470	620	900	640	510	450	700	670	760	1380	---
15	550	440	630	810	480	465	480	600	---	730	1160	420
16	530	410	---	800	480	---	520	530	680	760	830	495
17	520	430	770	840	---	470	815	555	690	760	---	510
18	510	---	720	810	540	485	815	---	655	845	860	490
19	500	430	680	790	545	460	770	560	690	845	710	470
20	500	450	670	---	585	490	---	685	680	---	700	480
21	---	540	730	640	580	460	621	550	580	860	630	---
22	480	---	630	600	545	440	670	540	---	1060	600	485
23	460	550	---	620	475	---	660	530	565	---	560	505
24	470	670	830	620	---	415	680	545	550	---	---	500
25	460	---	---	560	470	445	710	---	560	---	560	510
26	460	640	600	580	455	445	725	---	895	---	520	500
27	460	620	580	---	420	455	---	570	925	---	520	480
28	---	630	550	560	430	475	700	580	855	---	540	---
29	460	710	540	570	450	490	720	570	---	---	510	490
30	450	710	---	600	---	---	720	570	675	---	540	480
31	470	---	510	620	---	555	---	585	---	---	---	---
MEAN	553	550	645	730	579	472	600	627	692	783	947	521

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0	2.0	.0	.0	.0	.0	4.0	16.0	---	23.0	---	---
2	14.0	2.0	.0	.0	.0	---	4.0	15.0	19.0	22.0	---	17.0
3	12.0	4.0	.0	.0	---	.0	6.0	15.0	21.0	23.0	---	21.0
4	11.0	---	.0	.0	.0	.0	6.0	---	22.0	---	---	20.5
5	11.0	3.0	1.0	.0	.0	.0	7.0	16.0	20.0	24.0	---	19.0
6	11.0	1.0	1.0	---	.0	.0	---	16.0	23.0	---	---	20.0
7	---	.0	1.0	.0	.0	.0	9.0	12.0	21.0	26.0	---	---
8	10.0	.0	1.0	.0	.0	.0	8.0	11.0	---	25.0	17.0	24.0
9	9.0	.0	---	.0	.0	---	8.0	14.0	17.0	24.0	19.0	17.0
10	6.0	.0	1.0	.0	---	.0	7.0	14.0	21.0	30.0	---	16.0
11	13.0	---	.0	.0	.0	.0	6.0	---	22.0	26.0	22.0	18.0
12	12.0	.0	.0	.0	.0	1.0	9.0	13.0	21.5	24.0	22.0	17.0
13	6.0	.0	.0	---	.0	1.0	---	14.0	24.0	---	21.0	16.0
14	---	.0	.0	.0	.0	2.0	8.0	14.0	24.0	25.0	20.0	---
15	10.0	1.0	.0	.0	.0	1.0	11.0	16.0	---	24.0	21.0	19.0
16	11.0	3.0	---	.0	.0	---	11.5	13.5	20.0	25.0	20.0	13.0
17	10.0	1.0	.0	.0	---	2.0	14.0	16.0	20.0	20.0	---	14.0
18	9.0	---	.0	.0	.0	2.0	14.0	---	22.0	24.0	23.0	16.0
19	7.0	4.0	.0	.0	.0	4.0	15.0	17.0	20.0	22.0	23.0	16.0
20	10.0	2.0	.0	---	.0	5.0	---	18.0	20.0	---	22.0	15.0
21	---	.0	.0	.0	.0	4.0	17.0	19.0	21.0	23.0	20.0	---
22	4.0	---	.0	.0	.0	4.0	19.0	19.0	---	24.0	21.0	14.0
23	4.0	.0	---	.0	1.0	---	15.0	19.0	23.0	---	22.0	14.0
24	6.0	.0	.0	.0	---	3.0	12.0	20.0	24.0	---	---	14.0
25	6.0	.0	---	.0	.0	3.0	13.0	---	26.0	---	24.0	13.0
26	9.0	.0	.0	.0	.0	2.0	13.0	---	25.0	---	21.0	13.0
27	9.0	.0	.0	---	.0	2.0	---	19.0	24.0	---	16.0	14.0
28	---	.0	.0	.0	.0	3.0	15.0	20.0	20.0	---	20.0	---
29	8.0	.0	.0	.0	.0	2.0	15.0	21.0	---	---	21.0	17.0
30	6.0	.0	---	.0	---	---	15.0	19.0	22.0	---	19.0	16.0
31	4.0	---	.0	.0	---	5.0	---	18.0	---	---	---	---
MEAN	9.0	1.0	.0	.0	.0	2.0	11.0	16.5	21.5	24.0	20.5	16.5

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440 HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
77/11/03	10 30	0001										0.040
78/04/20	11 30	0001	2.950						30			0.040
78/06/07	10 45	0001	15.200									
78/07/10	11 00	0001							35			
78/08/09	10 30								55			
78/09/11	14 05								40			
78/10/19	11 45	0001							15			
79/04/03	11 00								25			
79/05/07	11 00								30			
79/06/04	11 00								40			
79/07/09	11 00								100			
79/08/06	11 00	0000							80			
79/09/11	11 00								20			
79/10/10	11 00								15			

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515 RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
77/11/03	10 30	0001	0.010									
78/04/20	11 30	0001	0.030					289				120.0
78/05/15	11 35	0001										52.0
78/06/07	10 00		0.030									
	10 45	0001						203				78.0
78/07/10	11 00	0001	0.020					193				93.0
78/08/09	10 30		0.010			3470		170				40.0
78/09/11	14 05					5895		207				64.0
78/10/19	11 45	0001	0.000			78		160				9.0
79/04/03	11 00		0.080			2080		110			14.0	44.0
79/05/07	11 00		0.030			286		133				28.0
79/06/04	11 00		0.030			413		142				30.0
79/07/09	11 00							226				193.0
79/07/12	12 00		0.070									
79/08/06	11 00	0000	0.010					160				97.0
79/09/11	11 00		0.040			1242		0.1				47.0
79/10/10	11 00		0.010			63		80				14.0

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
77/11/03	10 30	0001		0.00								200
78/04/20	11 30	0001		0.40	0.000					93800		1500
78/05/15	11 35	0001				0.000						
78/06/07	10 45	0001				0.020				301000		2820
78/07/10	11 00	0001				0.010				305000		
78/08/09	10 30					0.000				98400		
78/09/11	14 05					0.000				213000		
78/10/19	11 45	0001								4400		
79/04/03	11 00					0.000				9500		
79/05/07	11 00					0.000						
79/06/04	11 00					0.000						
79/07/09	11 00									0		
79/08/06	11 00	0000				0.110						
79/09/11	11 00					0.000				410		

Analyses by Corps of Engineers.
Tables from STORET.

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
77/11/03	10 30	0001								62		0.0
78/04/20	11 30	0001	3.00							127		0.0
78/05/15	11 35	0001	11.00							220		0.3
78/06/07	10 45	0001	25.00							570		0.5
78/07/10	11 00	0001	11.00							324		0.2
78/08/09	10 30		4.00							131		0.0
78/09/11	14 05		15.00							470		0.3
78/10/19	11 45	0001	0.00							29		0.0
79/04/03	11 00		0.00							120		0.0
79/05/07	11 00		0.00							55		0.4
79/06/04	11 00		1.00							55		0.0
79/07/09	11 00		20.00							600		0.8
79/08/06	11 00	0000	17.00							550		1.1
79/09/11	11 00		0.00							84		0.6
79/10/10	11 00		0.00							39		0.8

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
78/04/20	11 30	0001	0	168		3.0					
78/05/15	11 35	0001	0	110							
78/06/07	10 45	0001	0	243		15.0					
78/07/10	11 00	0001	20	190							
78/08/09	10 30		0	52							
78/09/11	14 05		0	230							
78/10/19	11 45	0001	0	10							
79/04/03	11 00			50							
79/05/07	11 00		0	10							
79/06/04	11 00		0	3							
79/07/09	11 00		0	240							
79/08/06	11 00	0000	20	210							
79/09/11	11 00		0	60							
79/10/10	11 00		0	10							

Analyses by Corps of Engineers.
Tables from STORET.

06452500 LAKE FRANCIS CASE AT PICKSTOWN, SD

LOCATION.--Lat 43°04'05", long 98°33'15", in SE¼ sec.5, T.95 N., R.65 W., Charles Mix County, Hydrologic Unit 10140101, in tower 6 of outlet works at Fort Randall Dam, on Missouri River at Pickstown, 1.0 mi (1.6 km) upstream from Randall Creek, and at mile 880.0 (1,415.9 km).

DRAINAGE AREA.--263,500 mi^2 (682,500 km^2), approximately.

STAGE-CONTENTS RECORDS

PERIOD OF RECORD.--December 1952 to current year (monthend contents only). Prior to October 1964, published as Fort Randall Reservoir at Pickstown.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Mar. 25, 1953, elevations determined from temporary nonrecording gages.

REMARKS.--Reservoir is formed by earthfill dam; storage began in December 1952; initial closure made July 1952. Maximum capacity, 5,816,000 acre-ft (7,170 hm^3) below elevation 1,375.0 ft (419.10 m), top of spillway gates. Normal maximum, 4,834,000 acre-ft (5,960 hm^3) below elevation 1,365.0 ft (416.05 m). Inactive storage, 1,336,000 acre-ft (1,650 hm^3) below elevation 1,310.0 ft (399.29 m). No dead storage; elevation of invert of lowest outlet is 1,227.0 ft (373.99 m). Figures given herein represent elevations at outlet works and total contents adjusted for wind effect.

The spillway consists of 21 taintor gates, each 40 ft (12.2 m) wide by 29 ft (8.8 m) high; spillway capacity, 490,000 ft^3/s (13,900 m^3/s) at pool elevation 1,375 ft (419.10 m). Crest of spillway is at elevation 1,346 ft (410.26 m). Normal releases are through 12 tunnels 22 ft (6.7 m) in diameter. Installation of power units in 8 of these tunnels was completed in January 1956; maximum release through power tunnels is 46,000 ft^3/s (1,300 m^3/s); maximum release through 4 other tunnels is 130,000 ft^3/s (3,680 m^3/s) at pool elevation 1,375 ft (419.10 m). Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevations and contents furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,087,000 acre-ft (6,270 hm^3) June 20, 1962, elevation, 1,364.2 ft (415.81 m), affected by wind; minimum since initial filling, 1,450,000 acre-ft (1,790 hm^3) Oct. 23, 1956, elevation, 1,311.5 ft (399.75 m), affected by wind.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,035,000 acre-ft (4,980 hm^3) Mar. 18, elevation, 1,358.69 ft (414.129 m); minimum contents, 2,411,000 acre-ft (2,970 hm^3) Dec. 4, elevation, 1,337.18 ft (407.572 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation	Contents	Change in contents
Sept. 30	1352.87	3493000	
Oct. 31	1346.73	3062000	-431000
Nov. 30	1338.28	2486000	-576000
Dec. 31	1340.07	2599000	+113000
CAL YR 1979			-187000
Jan. 31	1346.14	3007000	+408000
Feb. 29	1352.64	3519000	+512000
Mar. 31	1355.98	3787000	+268000
Apr. 30	1353.81	3612000	-175000
May 31	1354.74	3672000	+60000
June 30	1355.30	3737000	+65000
July 31	1353.46	3574000	-163000
Aug. 31	1355.40	3748000	+174000
Sept. 30	1352.90	3512000	-236000
WTR YR 1980			+19000

NOTE.--Reservoir frozen over Jan. 2 to Apr. 2.

MISSOURI RIVER MAIN STEM

06452500 LAKE FRANCIS CASE AT PICKSTOWN, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHUS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440 HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
77/10/25	13 30	0001	0.000									0.000
	13 30	0015	0.000									0.000
	13 30											
CP(S)-G		0005			200		160		10		0.59	
77/10/25	14 45											
78/02/23	11 30	0001	0.100									0.010
	11 30	0015	0.020									0.010
	11 30											
CP(S)-G					212		174	11	15		0.50	
78/02/23	13 30											
78/04/21	11 30	0001	0.020									0.010
	11 30	0015	0.020									0.010
	11 30											
CP(S)-G		0005			210		172	10	15	244	0.50	
78/04/21	13 00											
78/05/18	12 30	0001	0.030									0.000
	12 30	0045	0.050									0.070
	11 30											
CP(S)-G		0005			188		154	10	15	229	0.40	
78/05/18	13 00											
78/07/06	08 50	0001	0.010									0.030
	08 50	0030	0.020									0.020
	09 30											
CP(S)-G		0005	0.010									
78/07/06	09 55											
78/07/20	08 10	0001	0.010									0.030
	08 10	0030	0.020									0.020
78/08/10	08 30											
CP(S)-G		0005	0.020									
78/08/10	09 30											
78/08/17	11 00	0001	0.000									0.000
	11 00	0045	0.000									0.000
	11 00											
CP(S)-G		0005			195		160	11	5	262	0.40	
78/08/17	12 00											
78/09/14	10 30											
CP(S)-G			0.020									
78/09/14	11 00											
78/10/10	18 30											
CP(S)-G		0000			190		156	10	10	254	0.40	
78/10/10	19 30											
79/02/22	14 00											
CP(S)-G		0000	0.020									0.020
		0005			207		170	11	10	245	0.64	
		0055	0.020									0.020
79/02/22	15 00											
79/05/01	12 00											
CP(S)-G		0005		60.0			166	10	7	251	0.40	
79/05/01	13 00											
79/05/31	11 00											
CP(S)-G		0000	0.020									0.000
		0055	0.020									
79/05/31	11 00											
	11 00											
CP(S)-G		0005					162	10	10	236	0.70	
79/05/31	12 00											
	12 00											
CP(S)-G		0005		58.0								
79/05/31	13 00											
79/07/19	11 00											
CP(S)-G		0005	0.020	57.0			154	9	5	245	0.60	
79/07/19	12 00											
	12 00											
CP(S)-G		0000										0.000
		0055										0.000
79/07/19	13 00											
79/08/01	12 00											
CP(S)-G		0005	0.020									
79/08/01	13 00											
79/08/15	11 00											
CP(S)-G		0005		57.0			164	10	5	238	0.20	
79/08/15	12 00											
	12 00											
CP(S)-G		0000	0.020									0.000
		0055	0.030									0.030
79/08/15	13 00											

Analyses by Corps of Engineers.
Tables from STORET.

06452500 LAKE FRANCIS CASE AT PICKSTOWN, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440 HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
79/08/29	12 00											
CP(S)-6		0005	0.010									
79/08/29	13 00											
79/10/04	12 00											
CP(S)-6		0000	0.030									
		0005		61.0			178	4	5	241	0.50	0.010
		0055	0.030									0.010
79/10/04	13 00											
80/04/23	07 25											
CP(S)-6		0005	0.030	63.0			164	11		247		
80/04/23	07 35											
80/05/21	11 45											
CP(S)-6		0005	0.030	59.0			158	12		246		
80/05/21	12 00											
80/06/20	12 30											
CP(S)-6		0005	0.020									
80/06/20	13 00											
80/07/09	11 20											
CP(S)-6		0005	0.010	63.0			162	10		253		
80/07/09	11 40											
80/08/10	12 00											
CP(S)-6		0005	0.190									
80/08/10	12 15											
80/08/13	10 15											
CP(S)-6		0005	0.010	62.0			168	10		255		
80/08/13	10 35											
80/09/05	12 00											
CP(S)-6		0005	0.060									
80/09/05	12 20											
80/09/10	11 00											
CP(S)-6		0005	0.010	62.0			172	10		258		
80/09/10	11 20											
	11 05											
CP(S)-6		0005	0.030	63.0			170	11	5	253		
80/09/10	11 25											

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515 RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
77/10/25	13 30	0015	0.000						0.050		3.0	3.0
	14 30	0001	0.000						0.050		3.0	3.0
	13 30											
CP(S)-6		0005	0.000	200	406	0	2.0	140	0.030		3.0	3.0
77/10/25	14 45											
78/02/23	11 30	0001	0.000						0.040		3.0	4.0
	11 30	0015	0.000						0.040		4.0	4.0
	11 30											
CP(S)-6				150	494	8	0.0	250				
78/02/23	13 30											
78/04/21	11 30	0001	0.000						0.030		4.0	11.0
	11 30	0015	0.000						0.030		4.0	8.0
	11 30											
CP(S)-6		0005		165	498	7	4.0	213				
78/04/21	13 00											
78/05/18	12 30	0001	0.000						0.030		5.0	10.0
	12 30	0045	0.010						0.040		4.0	11.0
	11 30											
CP(S)-6		0005		188	480	7	1.0	120				
78/05/18	13 00											
78/07/06	08 50	0001	0.000						0.030		4.0	
	08 50	0030	0.000						0.000		3.0	
	09 30											
CP(S)-6		0005							0.130		5.0	
78/07/06	09 55											
78/07/20	08 10	0001	0.000						0.030		4.0	
	08 10	0030	0.000						0.000		3.0	
78/08/10	08 30											
CP(S)-6		0005							0.050		5.0	
78/08/10	09 30											
78/08/17	11 00	0001	0.000						0.010		4.0	7.0
	11 00	0045	0.000						0.010		3.0	7.0
	11 00											
CP(S)-6		0005		196	540	3	13.0	160				
78/08/17	12 00											
78/09/14	10 30											
CP(S)-6									0.060		6.0	
78/09/14	11 00											

Analyses by Corps of Engineers.
Tables from STORET.

06452500 LAKE FRANCIS CASE AT PICKSTOWN, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515 RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
78/10/10	18 30											
CP(S)-G		0000	0.000	205	522	4		250	0.040		4.0	10.0
78/10/10	19 30											
	19 30											
CP(S)-G		0055	0.000						0.060		4.0	9.0
78/10/10	19 30											
79/02/22	14 00											
CP(S)-G		0000	0.000						0.040		4.0	8.0
		0005		206		4	0.5	193				
		0055	0.000						0.040		4.0	10.0
79/02/22	15 00											
79/05/01	12 00											
CP(S)-G		0005		191	540	0	1.0	133				
79/05/01	13 00											
79/05/31	11 00											
CP(S)-G		0000	0.000						0.020		4.0	5.0
		0055							0.040		4.0	5.0
79/05/31	11 00											
	11 00											
CP(S)-G		0005		191	700	6		169				
79/05/31	12 00											
79/06/26	11 00								0.110		6.0	18.0
79/07/19	11 00											
CP(S)-G		0005		224	452	13	14.0	172	0.010		4.0	7.0
79/07/19	12 00											
	12 00											
CP(S)-G		0000	0.000									
		0055	0.000									
79/07/19	13 00											
79/08/01	12 00											
CP(S)-G		0005							0.030		5.0	12.0
79/08/01	13 00											
79/08/15	11 00											
CP(S)-G		0005		214	534	4	2.0	195				
79/08/15	12 00											
	12 00											
CP(S)-G		0000	0.000						0.020		4.0	5.0
		0055	0.030						0.020		3.0	3.0
79/08/15	13 00											
79/08/29	12 00											
CP(S)-G		0005							0.110		6.0	13.0
79/08/29	13 00											
79/10/04	12 00											
CP(S)-G		0000	0.000						0.050		4.0	8.0
		0005		223	574	2	5.0	378				
		0055	0.000						0.080		4.0	8.0
79/10/04	13 00											
80/04/23	07 25											
CP(S)-G		0005		218	518	5	3.0		0.010			
80/04/23	07 35											
80/05/21	11 45											
CP(S)-G		0005		232	484	0	1.0		0.040	0.000		
80/05/21	12 00											
80/06/20	12 30											
CP(S)-G		0005							0.080	0.010		
80/06/20	13 00											
80/07/09	11 20											
CP(S)-G		0005		215	516	0	2.0	125	0.000	0.000		
80/07/09	11 40											
80/08/10	12 00											
CP(S)-G		0005							0.040	0.010		
80/08/10	12 15											
80/08/13	10 15											
CP(S)-G		0005		260	1538	0	2.0	170	0.010	0.000		
80/08/13	10 35											
80/09/05	12 00											
CP(S)-G		0005							0.090			
80/09/05	12 20											
80/09/10	11 00											
CP(S)-G		0005		240	578	7	2.0	180	0.000	0.000		
80/09/10	11 20											
	11 05											
CP(S)-G		0005		240	606	4	2.0	180	0.000	0.000		
80/09/10	11 25											

Analyses by Corps of Engineers.
Tables from STORET.

06452500 LAKE FRANCIS CASE AT PICKSTOWN, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
77/10/25	13 30	0001	0.040				0.200		0.00			
	13 30	0015	0.040				0.200		0.00			
	13 30											
CP(S)-G		0005								170	2	20
77/10/25	14 45											
78/02/23	11 30	0001	0.100				0.400		0.00			
	11 30	0015	0.000				0.500		0.00			
	11 30											
CP(S)-G										40	2	20
78/02/23	13 30											
78/04/21	11 30	0001	0.090				0.300		0.01			
	11 30	0015	0.090				0.300		0.01			
	11 30											
CP(S)-G		0005								160	2	30
78/04/21	13 00											
78/05/18	11 30	0001	0.180				0.300		0.02			
	11 30	0045	0.180				0.200		0.02			
	11 30											
CP(S)-G		0005								120	2	30
78/05/18	13 00											
78/07/06	08 50	0001	0.030				0.200		0.01			
	08 50	0030	0.130				0.200		0.01			
	09 30											
CP(S)-G		0005	0.100				0.500		0.01			
78/07/06	09 55											
78/07/20	08 10	0001	0.030				0.200		0.01			
	08 10	0030	0.130				0.200		0.01			
	08 10											
CP(S)-G										140	2	20
78/07/20	09 15											
78/07/21	09 15											
CP(S)-G										940	2	
78/07/21	10 00											
78/08/10	08 30											
CP(S)-G		0005	0.090				0.600		0.01			
78/08/17	11 00	0001	0.100				0.000		0.00			
	11 00	0045	0.110				0.100		0.00			
	11 00											
CP(S)-G		0005								220	1	50
78/08/17	12 00											
78/09/14	10 30											
CP(S)-G			0.100				0.800		0.01			
78/09/14	11 00											
78/10/10	18 30											
CP(S)-G		0000	0.120						0.01			
78/10/10	19 30											
	19 30											
CP(S)-G		0055	0.120						0.01			
78/10/10	19 30											
	19 30											
CP(S)-G		0005								190		30
78/10/10	20 30											
79/02/22	14 00											
CP(S)-G		0000	0.110				0.500		0.01			
		0005								20	1	40
		0055	0.150				0.300		0.01			
79/02/22	15 00											
79/05/01	12 00											
CP(S)-G		0005								60	1	30
79/05/01	13 00											
79/05/31	11 00											
CP(S)-G		0000	0.010				0.400		0.01			
		0055	0.030				0.400		0.02			
79/05/31	11 00											
	11 00											
CP(S)-G		0005									2	
79/05/31	12 00											
	12 00											
CP(S)-G		0005								250		30
79/05/31	13 00											
79/06/26	11 00		0.030						0.09			

Analyses by Corps of Engineers.
Tables from STORET.

06452500 LAKE FRANCIS CASE AT PICKSTOWN, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
79/07/19	11 00											
CP(S)-G		0005	0.040				0.500		0.02	260	2	2
79/07/19	12 00											
79/08/01	12 00											
CP(S)-G		0005	0.020				0.500		0.01			
79/08/01	13 00											
79/08/15	11 00											
CP(S)-G		0005								90	2	50
79/08/15	12 00											
	12 00											
CP(S)-G		0000	0.020				0.400		0.01			
		0055	0.110				0.400		0.03			
79/08/15	13 00											
79/08/29	12 00											
CP(S)-G		0005	0.040				0.900		0.02			
79/08/29	13 00											
79/10/04	12 00											
CP(S)-G		0000	0.070				0.400		0.02			
		0005								190	2	40
		0055	0.070				0.400		0.04			
79/10/04	13 00											
80/04/23	07 25											
CP(S)-G		0005	0.070									
80/04/23	07 35											
80/05/21	11 45											
CP(S)-G		0005	0.030									
80/05/21	12 00											
80/06/20	12 30											
CP(S)-G		0005	0.010									
80/06/20	13 00											
80/07/09	11 20											
CP(S)-G		0005	0.000				0.280					
80/07/09	11 40											
80/08/10	12 00											
CP(S)-G		0005	0.010									
80/08/13	10 15											
CP(S)-G		0005	0.020				0.400			0	2	
80/08/13	10 35											
80/09/05	12 00											
CP(S)-G		0005	0.020									
80/09/05	12 20											
80/09/10	11 00											
CP(S)-G		0005	0.000							110	2	
80/09/10	11 20											
	11 05											
CP(S)-G		0005	0.010			0.000	0.300			240	2	
80/09/10	11 25											

Analyses by Corps of Engineers.
Tables from STORET.

06452500 LAKE FRANCIS CASE AT PICKSTOWN, SD--Continued

DATE, FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
77/10/25	13 30											
CP(S)-G		0005	0.00	2	0	4	4	157	20	47		
77/10/25	14 45											
78/02/23	11 30											
CP(S)-G			0.00	1	0	5	4	60	20	50		0.0
78/02/23	13 30											
78/04/21	11 30											
CP(S)-G		0005	0.00	1	0	3	5	200	20	48		0.0
78/04/21	13 00											
78/05/18	11 30											
CP(S)-G		0005	0.00	7	0	5	10	100	20	42		0.2
78/05/18	13 00											
78/07/20	08 15											
CP(S)-G		0005										1.5
78/07/20	09 00											
	08 10											
CP(S)-G			0.00	0	0	7	1	152	20	40		
78/07/20	09 15											
78/07/21	09 15											
CP(S)-G			0.00	1	0	11	4	700	30	49		
78/07/21	10 00											
78/08/17	11 00											
CP(S)-G		0005	0.00	2	0	2	2	160	10	48		0.4
78/08/17	12 00											
78/10/10	19 30											
CP(S)-G		0005	0.00	3	0	5	0	160	10	46		0.4
78/10/10	20 30											
79/02/22	14 00											
CP(S)-G		0005	0.00	5	0	8	5	340	30	49		0.5
79/02/22	15 00											
79/05/01	12 00											
CP(S)-G		0005	0.00	1	0	7	3	60	40	50	24.4	0.5
79/05/01	13 00											
79/05/31	11 00											
CP(S)-G		0005									22.0	0.6
79/05/31	12 00											
CP(S)-G		0005	0.00	4	0	9	1	270	31	46		
79/05/31	13 00											
79/07/19	11 00											
CP(S)-G		0005	1.00	3	0	9	3	300	15	59	25.0	0.4
79/07/19	12 00											
79/08/15	11 00											
CP(S)-G		0005	0.00	1	0	3	3	95	10	41	23.0	1.1
79/08/15	12 00											
79/10/04	12 00											
CP(S)-G		0005	0.00	3	10	5	5	189	0	43	22.0	0.4
79/10/04	13 00											
80/04/23	07 25											
CP(S)-G		0005									22.0	0.0
80/04/23	07 35											
80/05/21	11 45											
CP(S)-G		0005									21.0	0.3
80/05/21	12 00											
80/07/09	11 20											
CP(S)-G		0005									24.0	0.3
80/07/09	11 40											
80/08/13	10 15											
CP(S)-G		0005	0.00	3	7	0		111	0	58	24.0	0.3
80/08/13	10 35											
80/09/10	11 00											
CP(S)-G		0005	0.00	0		3		108	0	49	25.0	0.4
80/09/10	11 20											
	11 05											
CP(S)-G		0005	0.00	0	0	3		223	0	47	24.0	0.0
80/09/10	11 25											

Analyses by Corps of Engineers.
Tables from STORET.

06452500 LAKE FRANCIS CASE AT PICKSTOWN, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
77/10/25	13 30										
CP(S)-G		0005	0	11	2	1.0	0	20			11.0
77/10/25	14 45										
78/02/23	11 30										
CP(S)-G			0	7	0	2.0	0	51			35.0
78/02/23	13 30										
78/04/21	11 30										
CP(S)-G		0005	0	7	2	1.0	0	29			12.0
78/04/21	13 00										
78/05/18	11 30										
CP(S)-G		0005	0	10	1	0.0	0	23			12.0
78/05/18	13 00										
78/07/20	08 10										
CP(S)-G			0	7	1	0.0		12			46.0
78/07/20	09 15										
78/07/21	09 15										
CP(S)-G			0	10	1	1.0		15			58.0
78/07/21	10 00										
78/08/17	11 00										
CP(S)-G		0005		9	2	0.0	0	23			21.0
78/08/17	12 00										
78/10/10	18 30										
CP(S)-G		0005		6	2	1.0		26			
78/10/10	19 30										
	19 30										
CP(S)-G		0005									10.0
78/10/10	20 30										
79/02/22	14 00										
CP(S)-G		0005		10		0.0	0	52			42.0
79/02/22	15 00										
79/05/01	12 00										
CP(S)-G		0005	0	0			0	35	5.00	72.00	9.0
79/05/01	13 00										
79/05/31	11 00										
CP(S)-G		0005						58	5.00	72.00	
79/05/31	12 00										
CP(S)-G		0005	0	10	1	0.0	0	40			23.0
79/05/31	13 00										
79/07/19	11 00										
CP(S)-G		0005	0	11	1	1.0	0	33	5.00	76.00	84.0
79/07/19	12 00										
79/08/15	11 00										
CP(S)-G		0005	0	12	1	0.0	0	26	5.00	74.00	26.0
79/08/15	12 00										
79/10/04	12 00										
CP(S)-G		0005	0	7	1	0.0	0	36	5.00	75.00	19.0
79/10/04	13 00										
80/07/09	11 20										
CP(S)-G		0005								78.00	
80/07/09	11 40										
80/08/13	10 15										
CP(S)-G		0005		18	2	0.0		45		73.00	29.0
80/08/13	10 35										
80/09/10	11 00										
CP(S)-G		0005		0	2	0.0		24		79.00	16.0
80/09/10	11 20										
	11 05										
CP(S)-G		0005		0	2	0.0		2		76.00	29.0
80/09/10	11 25										

Analyses by Corps of Engineers.
Tables from STORET.

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD

LOCATION.--Lat 43°03'54", long 98°33'11", in NW¼NE¼ sec.8, T.95 N., R.65 W., Charles Mix County, Hydrologic Unit 10170101, in powerhouse of Fort Randall Dam on Missouri River at Pickstown, 0.8 mi (1.3 km) upstream from Randall Creek, and at mile 879.8 (1,415.6 km).

DRAINAGE AREA.--263,500 mi^2 (682,500 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1947 to current year. Prior to October 1969 published as "below Fort Randall Dam".

GAGE.--Totalizing flowmeters on each turbine in Fort Randall powerhouse. Prior to Nov. 10, 1965, water-stage recorder at site 7.0 mi (11.3 km) downstream at datum 1,230.00 ft (374.904 m) National Geodetic Vertical Datum of 1929 and Nov. 10, 1965, to June 30, 1969, at datum 5.00 ft (1.524 m) lower (Corps of Engineers bench mark).

REMARKS.--Records good. Flow completely regulated by Lake Francis Case (see station 06452500). Many diversions for irrigation above station.

COOPERATION.--Daily discharge determined from flow through turbines furnished by Corps of Engineers.

AVERAGE DISCHARGE.--33 years, 25,380 ft^3/s (718.8 m^3/s), 18,386,000 acre-ft/yr (22.7 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 447,000 ft^3/s (12,700 m^3/s) Apr. 12, 1952; maximum gage height, 20.82 ft (6.346 m) Apr. 12, 1952 (site and datum then in use); minimum daily discharge, 100 ft^3/s (2.83 m^3/s) Mar. 29, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1943 reached a stage of about 16.5 ft (5.03 m). Maximum stage known, in April 1881, was about 5 ft (1.5 m) higher than that of April 1943, both at site 7.0 mi (11.3 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge during year, 41,700 ft^3/s (1,180 m^3/s) Aug. 7; minimum daily, 6,300 ft^3/s (178 m^3/s) Feb. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37900	18600	37300	16800	16200	13900	26500	27300	27100	31300	35700	33800
2	35300	31000	28700	17800	15900	15000	26000	27200	27000	30400	38200	34800
3	34900	34900	30100	18400	15900	14900	21300	27200	27100	29300	37100	29900
4	34300	35200	29000	17800	15000	12800	23100	27300	25800	29500	37500	30200
5	33700	29100	27200	17900	14400	11700	23300	27300	24300	30400	41000	31900
6	37100	23400	24900	18000	13400	10700	23200	27900	22400	29000	40300	31200
7	36100	24700	21300	17900	12400	10900	23200	27300	22100	28800	41700	32900
8	36400	32600	21400	18000	12500	10800	21100	26700	22200	29500	40600	33300
9	35500	32100	17600	22100	12600	10700	21200	26800	23900	30400	40400	32200
10	36300	30600	21300	22000	12400	10800	23800	28900	26200	32300	31900	33400
11	35800	30600	19000	21900	12400	9200	25300	28200	24000	31500	29200	34200
12	35300	30600	19600	22000	13000	7800	26300	28800	26700	31700	32400	33500
13	35400	32100	19700	21800	13100	11500	26200	29300	28000	31900	32800	33400
14	35600	32500	22100	21900	13100	11700	25800	28600	28200	31800	33200	33500
15	36500	33100	21500	20000	12800	10900	26300	28700	27500	33100	33300	34200
16	36000	34300	21800	18800	12800	10500	26700	28700	28300	36100	32800	33900
17	36200	31500	21900	16600	13000	11000	26500	28300	25900	35800	30100	33500
18	36200	32200	22000	13100	13100	12700	25800	28400	26000	36200	31500	33700
19	36600	32700	19900	14500	12900	17500	25700	28600	25200	37100	30800	34400
20	34800	32800	18900	14400	12700	23700	25700	27100	24400	37300	31800	34100
21	34900	32300	17100	13900	12600	26600	25600	27700	26800	37500	32700	34000
22	33200	33200	17500	12900	11800	27300	25500	27100	27700	37600	30600	35000
23	33000	32300	17500	13200	10900	26300	25200	27600	28300	35300	31200	35100
24	32500	31100	17600	13200	11100	26500	25300	27000	28900	35600	32000	34500
25	32200	31800	17900	12900	10300	28500	26700	26900	31600	34900	32500	31500
26	35000	30200	17800	13000	8100	27500	26500	27100	31700	36000	32300	31300
27	36400	34200	17200	13100	6300	27500	28300	27700	29400	35900	28200	33500
28	35400	35700	16200	15900	6400	27500	27100	26600	30600	35700	28300	35100
29	37000	37500	16300	18000	13200	27900	25800	26600	29600	35400	32800	35500
30	35700	37700	17800	17300	---	28000	27000	25200	31800	36000	34300	36000
31	22400	---	17900	15600	---	27100	---	26600	---	35700	34300	---
TOTAL	1083600	950600	656000	530700	360300	549400	756000	854700	808700	1039000	1051500	1003500
MEAN	34950	31690	21160	17120	12420	17720	25200	27570	26960	33520	33920	33450
MAX	37900	37700	37300	22100	16200	28500	28300	29300	31800	37600	41700	36000
MIN	22400	18600	16200	12900	6300	7800	21100	25200	22100	28800	28200	29900
AC-FT	2149000	1886000	1301000	1053000	714700	1090000	1500000	1695000	1604000	2061000	2086000	1990000

CAL YR 1979 TOTAL 10168400 MEAN 27860 MAX 43500 MIN 1100 AC-FT 20170000
WTR YR 1980 TOTAL 9644000 MEAN 26350 MAX 41700 MIN 6300 AC-FT 19130000

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1978.
WATER TEMPERATURES: October 1974 to September 1978.
DISSOLVED OXYGEN: October 1974 to September 1978.

INSTRUMENTATION.--Water-quality monitor since June 1973.

REMARKS.--Water is supplied to the monitor from the raw water intake located in the penstocks. This location is 121 ft (37 m) below the normal pool surface. Depth of observation is 1,227 ft (374 m) above mean sea level. Records prior to October 1974 are on file in the District office, Corps of Engineers, Omaha, NE. In addition to the water-quality monitor, samples were collected once a month.

COOPERATION.--Records of specific conductance, water temperature, dissolved oxygen and pH were furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 850 micromhos Mar. 10, 1975; minimum daily mean, 606 micromhos Dec. 7, 1976.
WATER TEMPERATURES: Maximum daily mean, 25.5°C Aug. 9, 12-16, 25, 1975, July 31 to Aug. 2, Aug. 5, 10, 1977, Aug. 25, 1978; minimum daily mean, 0.0°C Jan. 21-26, 1975.
DISSOLVED OXYGEN: Maximum daily mean, 13.2 mg/L Jan. 2, 3, Feb. 5-11, 14-21, 1975; minimum daily mean, 6.7 mg/L Aug. 6, 8, 1977.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
24...	1200	38600	810	8.3	14.0	2.8	9.4	K4	K3	240	92	59
NOV												
28...	1200	37800	830	7.3	5.0	20	12.0	5	9	250	89	60
DEC												
18...	1100	30500	780	7.3	1.0	4.7	13.0	K2	K2	240	75	58
JAN												
30...	1200	22700	860	7.2	1.5	.30	13.6	K3	--	240	80	58
FEB												
27...	1130	18600	890	7.9	2.5	1.5	14.3	K1	K2	260	100	64
MAR												
17...	1215	20500	830	7.2	4.0	3.0	14.0	K1	K1	250	99	60
APR												
22...	1200	36300	800	8.6	9.0	5.3	13.0	K1	<1	260	110	61
MAY												
22...	0800	33600	780	8.2	10.0	1.4	12.6	K1	10	240	89	56
JUN												
23...	1200	33700	840	8.9	19.0	280	8.7	9	30	240	120	59
JUL												
22...	1300	40700	820	7.6	24.0	6.3	7.4	28	K120	250	81	61
AUG												
25...	1145	40000	830	8.1	24.5	1.8	8.5	19	20	250	100	59
SEP												
23...	1130	41800	800	8.2	20.5	4.0	--	K5	30	250	89	60

< Less than.
K Non-ideal colony count.

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)
OCT												
24...	23	76	52	2.1	5.8	82	150	230	11	.5	6.6	520
NOV												
28...	24	78	52	2.2	5.9	84	160	250	11	.5	6.4	536
DEC												
18...	22	76	52	2.2	5.0	81	160	230	11	.5	6.4	525
JAN												
30...	23	74	40	2.1	4.9	79	160	250	12	.5	5.7	534
FEB												
27...	25	78	39	2.1	5.0	83	160	250	13	.5	5.9	531
MAR												
17...	24	78	40	2.2	4.9	--	150	240	11	.5	5.8	529
APR												
22...	25	80	40	2.2	5.1	--	150	240	11	.5	80	530
MAY												
22...	24	75	40	2.1	5.1	--	150	220	10	.4	5.2	503
JUN												
23...	23	74	39	2.1	4.7	--	120	230	20	.5	4.8	517
JUL												
22...	24	80	40	2.2	5.8	--	170	240	11	.7	4.6	536
AUG												
25...	25	78	40	2.1	5.3	--	150	240	11	.5	5.7	540
SEP												
23...	24	80	40	2.2	5.9	--	160	260	12	.6	5.9	538

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT												
24...	502	.71	54200	--	.07	.07	.01	.01	.01	.01	.35	.52
NOV												
28...	532	.73	54700	--	.08	.11	.03	.04	.03	.04	.54	--
DEC												
18...	506	.71	43200	--	.09	.10	.01	.01	.01	.01	.50	.54
JAN												
30...	525	.73	32700	--	.13	.13	.02	.03	.01	.01	.68	.33
FEB												
27...	538	.72	26700	--	.17	.09	.06	.08	.03	.04	.16	.20
MAR												
17...	515	.72	29300	--	.10	.12	.04	.05	.02	.02	.57	.61
APR												
22...	503	.72	51900	16	.06	.06	.01	.01	.01	.01	.36	.86
MAY												
22...	486	.68	45600	--	.06	.07	.03	.04	.03	.04	.75	.42
JUN												
23...	488	.70	47000	--	.07	.03	.04	.05	.06	.07	.45	.45
JUL												
22...	529	.73	58900	--	.00	.03	.00	.00	.00	.00	.74	.88
AUG												
25...	515	.73	58300	--	.00	.00	.01	.01	.03	.04	.35	.41
SEP												
23...	545	.73	60700	6	.00	.00	.00	.00	.03	.04	.30	.41

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	PHOS-PHORUS, HYDRO. + ORTHO DISSOL. (MG/L AS P) (00677)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT 24...	.36	.17	.53	.43	.60	2.7	--	--	--	.010	.020
NOV 28...	.57	--	--	.65	--	--	--	--	--	.000	.060
DEC 18...	.51	.04	.55	.60	.65	2.9	--	--	--	.010	.010
JAN 30...	.70	.00	.34	.83	.47	2.1	--	--	--	.020	.020
FEB 27...	.22	.01	.23	.39	.32	1.4	--	--	--	.010	.040
MAR 17...	.61	.02	.63	.71	.75	3.3	--	--	--	.020	.020
APR 22...	.37	.50	.87	.43	.93	4.1	.05	--	--	.010	.010
MAY 22...	.78	.00	.45	.84	.52	2.3	--	--	--	.010	.010
JUN 23...	.49	.02	.51	.56	.54	2.4	--	--	--	.010	.020
JUL 22...	.74	.14	.88	.74	.91	4.0	--	--	--	.010	.020
AUG 25...	.36	.08	.44	.36	.44	1.9	.00	--	--	.020	.010
SEP 23...	.30	.14	.44	.30	.44	1.9	.00	--	--	.010	.020

DATE	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)
OCT 24...	.06	--	6.9	.1	--	--	--	--	--	--	--
NOV 28...	.18	--	--	--	5.2	--	--	--	--	--	--
DEC 18...	.03	--	--	--	9.0	1500	--	--	--	--	--
JAN 30...	.06	--	10	.5	--	--	--	--	--	--	--
FEB 27...	.12	--	--	--	6.8	--	--	--	--	--	--
MAR 17...	.06	--	--	--	3.3	--	--	--	--	--	--
APR 22...	.03	.15	14	--	--	350	--	--	--	--	--
MAY 22...	.03	--	--	--	6.2	280	--	--	--	--	--
JUN 23...	.06	--	--	--	4.2	440	--	--	--	--	--
JUL 22...	.06	--	5.5	--	--	120	--	--	--	--	--
AUG 25...	.03	.00	--	--	3.1	65	--	--	--	--	--
SEP 23...	.06	.00	--	--	21	170	--	--	--	--	--

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS- PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM SUS- PENDED RECOV- ERABLE (UG/L AS CD) (01026)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, SUS- PENDED RECOV. (UG/L AS CR) (01031)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)
OCT											
24...	1200	3	0	3	0	0	<1	0	0	0	1
JAN											
30...	1200	2	1	1	0	0	<1	0	0	0	0
APR											
22...	1200	2	0	2	1	--	<1	0	0	0	0
JUL											
22...	1300	3	1	2	0	--	<1	20	10	10	2

DATE	COBALT, SUS- PENDED RECOV- ERABLE (UG/L AS CO) (01036)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, SUS- PENDED RECOV- ERABLE (UG/L AS CU) (01041)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, SUS- PENDED RECOV- ERABLE (UG/L AS PB) (01050)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
OCT											
24...	0	<3	1	1	0	70	<10	2	2	0	20
JAN											
30...	0	<3	10	0	10	50	10	8	5	3	60
APR											
22...	--	<3	3	1	2	260	40	3	3	0	20
JUL											
22...	--	<3	6	5	1	150	<10	8	6	2	40

DATE	MANGA- NESE, SUS- PENDED RECOV. (UG/L AS MN) (01054)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY SUS- PENDED RECOV- ERABLE (UG/L AS HG) (71895)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, SUS- PENDED TOTAL (UG/L AS SE) (01146)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, SUS- PENDED RECOV- ERABLE (UG/L AS ZN) (01091)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT											
24...	20	2	.1	.1	.0	2	0	2	5	0	5
JAN											
30...	10	50	.0	.0	.0	2	0	2	10	7	<3
APR											
22...	20	4	.0	.0	.0	2	1	1	10	0	10
JUL											
22...	30	8	.0	.0	.0	1	0	1	30	--	<3

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT												
24...	1200	38600	128	13300	83	--	--	--	--	--	--	--
NOV												
28...	1200	37800	76	7760	84	--	--	--	--	--	--	--
DEC												
18...	1100	30500	81	6670	95	--	--	--	--	--	--	--
JAN												
30...	1200	22700	68	4170	90	--	--	--	--	--	--	--
FEB												
27...	1130	18600	107	5370	55	--	--	--	--	--	--	--
MAR												
17...	1215	20500	71	3930	87	--	--	--	--	--	--	--
APR												
22...	1200	36300	--	--	--	--	--	--	--	--	--	--
MAY												
22...	0800	33600	70	6350	--	--	--	--	60	78	90	100
JUN												
23...	1200	33700	75	6820	80	--	--	--	--	--	--	--
JUL												
22...	1300	40700	--	--	--	--	--	--	--	--	--	--
AUG												
25...	1145	40000	43	4640	66	--	--	--	--	--	--	--
SEP												
23...	1130	41800	30	3390	50	--	--	--	--	--	--	--

< Less than.

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 27,79		SEP 24,79		DEC 18,79		APR 22,80		MAY 22,80	
TIME	1215		1130		1100		1200		0800	
TOTAL CELLS/ML	130000		1100		1500		350		280	
DIVERSITY: DIVISION	1.7		1.3		0.1		1.3		0.4	
.CLASS	1.7		1.3		0.1		1.3		0.7	
..ORDER	2.0		1.5		0.2		1.3		1.1	
...FAMILY	2.2		1.5		0.3		1.5		1.4	
....GENUS	3.2		1.5		0.7		2.1		1.4	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	--	-	14	1	*	0	--	-	--	-
...MICRACTINIACEAE										
....GOLENKINIA	720	1	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	1100	1	--	-	*	0	--	-	26	9
....DICTYOSPHAERIUM	5400	4	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	720	1	--	-	*	0	--	-	--	-
....OOCYSTIS	1400	1	--	-	*	0	--	-	--	-
...SCENEDESMACEAE										
....ACTINASTRUM	8600	7	--	-	--	-	--	-	--	-
....CRUCIGENIA	2200	2	--	-	--	-	--	-	--	-
....SCENEDESMUS	3600	3	--	-	--	-	--	-	--	-
....TETRASTRUM	3900	3	--	-	--	-	--	-	--	-
..TETRASPORALES										
...PALMELLACEAE										
....SPHAEROCYSTIS	--	-	670#	59	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	--	-	--	-	--	-	13	4	--	-
...PHACOTACEAE										
....PHACOTUS	--	-	14	1	--	-	--	-	--	-
....PTEROMONAS	*	0	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	23000#	18	--	-	30	2	--	-	26	9
....MELOSIRA	7900	6	200#	18	--	-	--	-	--	-
..PENNALES										
...DIATOMACEAE										
....DIATOMA	--	-	--	-	--	-	13	4	--	-
...FRAGILARIACEAE										
....ASTERIONELLA	--	-	--	-	1300#	88	77#	22	210#	73
....FRAGILARIA	--	-	--	-	120	8	120#	33	--	-
...NITZSCHIACEAE										
....NITZSCHIA	3900	3	--	-	--	-	--	-	13	5
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...OCHROMONADACEAE										
....DINOBRYON	--	-	--	-	--	-	--	-	13	5
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 27,79	SEP 24,79	DEC 18,79	APR 22,80	MAY 22,80
TIME	1215	1130	1100	1200	0800
TOTAL CELLS/ML	130000	1100	1500	350	280
DIVERSITY: DIVISION	1.7	1.3	0.1	1.3	0.4
.CLASS	1.7	1.3	0.1	1.3	0.7
..ORDER	2.0	1.5	0.2	1.3	1.1
...FAMILY	2.2	1.5	0.3	1.5	1.4
....GENUS	3.2	1.5	0.7	2.1	1.4

ORGANISM	AUG 27,79 CELLS /ML	AUG 27,79 PER-CENT	SEP 24,79 CELLS /ML	SEP 24,79 PER-CENT	DEC 18,79 CELLS /ML	DEC 18,79 PER-CENT	APR 22,80 CELLS /ML	APR 22,80 PER-CENT	MAY 22,80 CELLS /ML	MAY 22,80 PER-CENT
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	120#	33	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	*	0	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	27000#	22	230#	20	--	-	--	-	--	-
....ANACYSTIS	30000#	24	--	-	--	-	--	-	--	-
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE										
....OSCILLATORIA	2900	2	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	1100	1	--	-	--	-	--	-	--	-
....TRACHELOMONAS	2500	2	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	13	4	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

PHYTOPLANKTON ANALYSES

DATE TIME	JUN 23,80 1200	JUL 22,80 1300	AUG 25,80 1145	SEP 23,80 1130
TOTAL CELLS/ML	440	120	65	170
DIVERSITY: DIVISION	0.3	0.5	1.9	1.5
.CLASS	0.3	0.5	1.9	1.5
..ORDER	0.6	0.5	1.9	1.7
...FAMILY	0.6	0.5	2.3	1.7
....GENUS	0.7	0.5	2.3	1.7

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	100#	89	13#	20	13	8
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	--	-	--	-	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-
..TETRASPORALES								
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	--	-	--	-	13	8
...PHACOTACEAE								
....PHACOTUS	--	-	--	-	--	-	--	-
....PTEROMONAS	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	13	3	--	-	13#	20	--	-
....MELOSIRA	13	3	--	-	--	-	--	-
..PENNALES								
...DIATOMACEAE								
....DIATOMA	--	-	--	-	--	-	--	-
...FRAGILARIACEAE								
....ASTERIONELLA	--	-	--	-	--	-	--	-
....FRAGILARIA	--	-	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....DINOBRYON	--	-	--	-	--	-	--	-
....OCHROMONAS	--	-	--	-	--	-	13	8

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	JUN 23,80	JUL 22,80	AUG 25,80	SEP 23,80
TIME	1200	1300	1145	1130
TOTAL CELLS/ML	440	120	65	170
DIVERSITY: DIVISION	0.3	0.5	1.9	1.5
.CLASS	0.3	0.5	1.9	1.5
..ORDER	0.6	0.5	1.9	1.7
...FAMILY	0.6	0.5	2.3	1.7
....GENUS	0.7	0.5	2.3	1.7

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	13#	20	26#	15
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	13	11	13#	20	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	--	-
....ANACYSTIS	26	6	--	-	--	-	100#	62
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	390#	88	--	-	--	-	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	13#	20	--	-
....TRACHELOMONAS	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440 HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
77/10/27	14 00	0001	0.000									
78/04/27	10 00								10			
CP(S)-6												
78/04/27	10 30											0.000
	16 00	0001										
78/05/31	12 00	0001							15			
78/06/20	11 00								15			
78/07/11	11 00	0001							8			0.030
78/08/29	15 00	0001							10			0.020
78/09/25	11 00	0001							25			
78/10/23	12 00	0001							10			0.010
79/04/19	12 00		0.030						10			
79/05/14	11 00	0000							15			
79/06/25	11 00	0000							15			0.010
79/07/17	11 00	0000							5			
79/08/27	11 00								5			
79/09/27	13 00								5			
79/10/24	11 00								5			
									5			0.010

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515 RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
77/10/27	14 00	0001	0.000		2							
78/04/27	10 00							160	0.040			3.0
CP(S)-6			0.000									
78/04/27	10 30											
	16 00	0001			96							
78/05/31	12 00	0001			5			143	0.110			12.0
78/06/20	11 00		0.000		7			197				24.0
78/07/11	11 00	0001	0.000		10			148	0.040			5.0
78/08/29	15 00	0001			9			186	0.020			10.0
78/09/25	11 00	0001	0.000		5			231	0.010			9.0
78/10/23	12 00	0001	0.000					190	0.010			4.0
79/04/19	12 00		0.000			9		251				9.0
79/05/14	11 00	0000	0.000			17		170				7.0
79/06/25	11 00	0000	0.000			0	3.0					7.0
79/07/07	12 00		0.000			8		159				9.0
79/07/17	11 00	0000										
79/08/27	11 00		0.000			8		206				8.0
79/09/27	11 00		0.000			3		220				5.0
	13 00											
79/10/24	11 00		0.000			0		0.2				6.0
						18		260				6.0

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
77/10/27	14 00	0001					0.200			170		30
78/04/27	16 00	0001				0.000				3000		
78/05/31	12 00	0001				0.000				110		
78/06/20	11 00					0.000				290		30
78/07/11	11 00	0001				0.000				350		20
78/08/29	15 00	0001				0.000				230		50
78/09/25	11 00	0001				0.000				230		30
78/10/23	12 00	0001				0.000				200		
79/04/19	12 00					0.000	0.300			200		
79/05/14	11 00	0000				0.000				100		
79/06/25	11 00	0000				0.000						
79/07/17	11 00	0000				0.000				170		
79/08/27	11 00					0.000				200		
79/09/27	13 00					0.000				90		
79/10/24	11 00					0.000						

Analyses by Corps of Engineers.
Tables from STORET.

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
77/10/27	14 00	0001	0.00							48		0.0
78/04/27	16 00	0001	0.00							51		0.0
78/05/31	12 00	0001	0.00							46		0.0
78/06/20	11 00		0.00							45		0.1
78/07/11	11 00	0001	0.00							46		0.0
78/08/29	15 00	0001	0.00							48		0.0
78/09/25	11 00	0001	0.00							40		0.0
78/10/23	12 00	0001	0.00							39		0.0
79/04/19	12 00		0.00							49		0.0
79/05/14	11 00	0000	0.00							42		0.3
79/06/25	11 00	0000								46		0.3
79/07/17	11 00	0000	1.00							49		0.0
79/08/27	11 00		0.00							40		0.0
79/09/27	13 00		0.00							35		0.1
79/10/24	11 00		0.00							43		0.2

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
77/10/27	14 00	0001	0	12			0				
78/04/27	16 00	0001	0	16							
78/05/31	12 00	0001	0	10							
78/06/20	11 00		0	8			0				
78/07/11	11 00	0001	0	10			0				
78/08/29	15 00	0001	0	3			0				
78/09/25	11 00	0001	0	3			0				
78/10/23	12 00	0001	0	12							
79/04/19	12 00		0	10							
79/05/14	11 00	0000	0	0							
79/06/25	11 00	0000	20	13							
79/07/17	11 00	0000	0	12							
79/08/27	11 00		0	11							
79/09/27	13 00		0	13							
79/10/24	11 00		14	5							

Analyses by Corps of Engineers.
Tables from STORET.

06464500 KEYA PAHA RIVER AT WEWELA, SD

LOCATION.--Lat 43°01'42", long 99°46'45", in SE¼ sec.24, T.95 N., R.76 W., Tripp County, Hydrologic Unit 10150006, on left bank 13 ft (4 m) downstream from bridge on U.S. Highway 183, 1.0 mi (1.6 km) north of Wewela, 4.5 mi (7.2 km) upstream from Holt Creek, and 11.5 mi (18.5 km) downstream from Lost Creek.

DRAINAGE AREA.--1,070 mi² (2,770 km²), approximately.

PERIOD OF RECORD.--November 1937 to September 1940, October 1947 to current year. Monthly discharge only for October 1947, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,049.78 ft (624.773 m) National Geodetic Vertical Datum of 1929. Prior to June 21, 1957, nonrecording gage at site 13 ft (4 m) upstream at same datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--35 years (water years 1939-40, 1948-80), 67.5 ft³/s (1.912 m³/s), 48,900 acre-ft/yr (60.3 hm³/s); median of yearly mean discharges, 58 ft³/s (1.64 m³/s), 42,000 acre-ft/yr (52 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,430 ft³/s (154 m³/s) Mar. 31, 1952, gage height, 13.08 ft (3.987 m); maximum gage height, 13.5 ft (4.11 m) Mar. 25, 1950, from floodmark (backwater from ice); no flow Jan. 10 to Feb. 15, 1949, Aug. 19 to Sept. 14, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 200 ft³/s (5.66 m³/s) Apr. 4, gage height, 2.26 ft (0.689 m); maximum gage height, 2.39 ft (0.728 m) Feb. 23 (backwater from ice), no peak above base of 250 ft³/s (7.08 m³/s); minimum daily discharge, 1.9 ft³/s (0.054 m³/s) Aug. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	63	18	42	45	70	82	46	45	25	3.7	7.6
2	18	59	19	40	45	65	97	46	43	23	3.4	7.8
3	18	56	20	40	48	70	128	45	38	21	3.2	7.6
4	19	54	21	42	50	75	168	44	36	20	2.8	7.5
5	20	54	22	40	55	75	187	42	33	22	2.6	7.0
6	21	52	22	40	55	75	173	40	32	33	2.4	6.7
7	21	53	21	40	53	80	166	39	35	20	1.9	6.5
8	22	53	21	38	53	90	176	39	36	18	2.0	5.9
9	23	51	22	30	50	95	140	39	35	18	3.3	5.8
10	24	49	25	35	50	90	112	39	34	18	6.0	6.0
11	24	51	27	40	52	95	106	39	32	16	10	6.4
12	25	53	27	40	52	100	100	38	30	14	9.0	6.9
13	25	51	25	43	50	110	95	39	29	12	8.5	6.8
14	26	49	25	45	48	105	90	40	27	13	7.7	7.2
15	28	47	23	45	45	100	84	37	29	12	8.9	7.7
16	28	47	23	43	45	103	77	39	29	11	12	7.7
17	28	47	25	43	50	93	73	41	36	8.8	13	8.2
18	29	47	30	42	60	84	70	42	47	8.6	12	8.3
19	29	46	31	42	65	79	68	40	50	7.8	11	9.0
20	29	46	40	40	45	78	66	38	51	7.4	11	9.7
21	32	40	45	40	38	75	62	37	63	7.2	11	11
22	34	30	43	40	38	73	59	34	51	6.7	10	11
23	36	25	43	42	37	71	57	33	44	6.4	9.8	12
24	36	22	45	44	35	69	53	32	37	5.8	8.7	12
25	35	21	45	45	40	68	52	31	33	5.6	8.2	12
26	34	20	44	42	60	67	51	31	31	5.6	9.4	12
27	34	20	43	41	80	68	50	29	32	5.3	9.5	12
28	33	19	43	40	78	73	49	28	29	5.1	8.9	13
29	36	19	42	40	75	77	48	29	25	4.7	8.4	12
30	45	18	43	41	---	76	47	42	25	4.4	7.6	13
31	58	---	45	43	---	76	---	45	---	3.9	7.2	---
TOTAL	887	1262	968	1268	1497	2525	2786	1183	1097	389.3	233.1	266.3
MEAN	28.6	42.1	31.2	40.9	51.6	81.5	92.9	38.2	36.6	12.6	7.52	8.88
MAX	58	63	45	45	80	110	187	46	63	33	13	13
MIN	17	18	18	30	35	65	47	28	25	3.9	1.9	5.8
AC-FT	1760	2500	1920	2520	2970	5010	5530	2350	2180	772	462	528

CAL YR 1979 TOTAL 22593.7 MEAN 61.9 MAX 572 MIN 3.1 AC-FT 44810
WTR YR 1980 TOTAL 14361.7 MEAN 39.2 MAX 187 MIN 1.9 AC-FT 28490

06467000 LEWIS AND CLARK LAKE NEAR YANKTON, SD

LOCATION.--Lat 42°50'56", long 97°28'54", in SW¼ sec.7, T.33 N., R.1 W., Cedar County, NE, Hydrologic Unit 10170101, in powerhouse of Gavins Point Dam on Missouri River, 3.75 mi (6.0 km) southwest of Yankton, 13.6 mi (21.9 km) upstream from James River, 32.5 mi (52.3 km) downstream from Niobrara River, and at mile 811.0 (1,304.9 km).

DRAINAGE AREA.--279,500 mi² (723,900 km²), approximately.

PERIOD OF RECORD.--July 1955 to current year (monthend contents only). Prior to October 1955, published as Gavins Point Reservoir near Yankton.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Dec. 9, 1955, recorder at temporary location on wall of intake structure unit 3.

REMARKS.--Reservoir is formed by earthfill dam; storage began in July 1955. Maximum capacity, 541,000 acre-ft (667 hm³) below elevation 1,210.0 ft (368.81 m), top of spillway gates. Normal maximum, 477,000 acre-ft (588 hm³) below elevation 1,208.0 ft (368.20 m). Inactive storage, 156,000 acre-ft (192 hm³) below elevation 1,195.0 ft (364.24 m). Dead storage, 18,000 acre-ft (22.2 hm³) below elevation 1,180.0 ft (359.66 m) crest of spillway. Figures given herein represent elevations at powerhouse and total contents adjusted for wind effect.

The spillway consists of 14 taintor gates, each 40 ft (12.2 m) wide by 30 ft (9.1 m) high; spillway capacity, 280,000 ft³/s (7,930 m³/s) at pool elevation 1,210.0 ft (368.81 m). Crest of spillway is at elevation 1,180.0 ft (359.66 m). Normal releases are through 3 power units, installation completed in January 1957; maximum release through power units is 35,000 ft³/s (991 m³/s) at pool elevation, 1,210.0 ft (368.81 m). Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevations and contents furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 565,000 acre-ft (697 hm³) Apr. 1, 1960, elevation, 1,210.7 ft (369.02 m), affected by wind; minimum since initial filling, 61,950 acre-ft (76.4 hm³) Apr. 23, 1956, elevation, 1,188.1 ft (362.13 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 488,000 acre-ft (602 hm³) Oct. 31, elevation, 1,209.17 ft (368.555 m); minimum, 357,000 acre-ft (440 hm³) May 9, 10, elevation, 1,204.46 ft (367.119 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation	Contents	Change in contents
Sept. 30	1208.07	458000	
Oct. 31	1209.17	488000	+30000
Nov. 30	1208.10	455000	-33000
Dec. 31	1208.31	463000	+8000
CAL YR 1979			+40000
Jan. 31	1207.94	452000	-11000
Feb. 29	1205.11	375000	-77000
Mar. 31	1205.61	388000	+13000
Apr. 30	1204.69	363000	-25000
May 31	1205.38	382000	+19000
June 30	1205.67	390000	+8000
July 31	1206.13	401000	+11000
Aug. 31	1207.90	452000	+51000
Sept. 30	1207.84	449000	-3000
WTR YR 1980			-9000

NOTE.--Reservoir frozen over Dec. 17 to Mar. 21.

06467500 MISSOURI RIVER AT YANKTON, SD

LOCATION.--Lat 42°51'58", long 97°23'37", in SW¼SW¼ sec.18, T.93 N., R.55 W., Yankton County, Hydrologic Unit 10170101, near left bank in downstream end of left pier of Meridian Highway Bridge on U.S. Highway 81, 5.2 mi (8.4 km) downstream from Gavins Point Dam, 6.0 mi (9.7 km) upstream from James River, and at mile 805.8 (1,296.5 km).

DRAINAGE AREA.--279,500 mi² (723,900 km²), approximately.

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1309. Gage-height records collected at same site March 1873 to November 1886, March 1905 to May 1908 (fragmentary), August 1921 to date (except winter months prior to 1932), are contained in reports of the U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is 1,139.68 ft (347.374 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 20, 1932, nonrecording gage, and Sept. 20, 1932, to Mar. 9, 1967, water-stage recorder at present site and at datum 20.0 ft (6.096 m) higher.

REMARKS.--Records fair Oct. 1 to Jan. 12 and good Jan. 13 to Sept. 30. Flow completely regulated by Lewis and Clark Lake 5.2 mi (8.4 km) upstream since July 1955 (see station 06467000). Many diversions for irrigation and water supply above station. Corps of Engineers gage-heigh telemeter at station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--50 years, 26,410 ft³/s (747.9 m³/s), 19,130,000 acre-ft/yr (23.6 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 480,000 ft³/s (13,600 m³/s) Apr. 13, 1952; maximum gage height, 35.5 ft (10.82 m) Apr. 13, 14, 1952 (present datum); minimum daily discharge, 2,700 ft³/s (76.5 m³/s) Nov. 15, 16, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 50.5 ft (15.39 m) Apr. 5, 1881 (ice jam), present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 41,600 ft³/s (1,180 m³/s) Nov. 30, gage height, 19.14 ft (5.834 m); minimum daily discharge, 11,000 ft³/s (312 m³/s) Mar. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39700	32600	41300	20700	17400	14700	29700	29800	28600	31500	38200	34100
2	40000	32700	41500	20400	17400	14700	29800	29700	28600	31600	38200	33500
3	39000	33000	40200	20400	17400	14800	29500	29800	28000	31600	38200	33600
4	39000	32700	37500	20500	17400	14700	28700	30400	27800	31500	38000	33600
5	39100	32700	34000	20600	17300	14900	26700	30500	26600	31800	37900	33700
6	39000	33100	31700	20400	17500	15000	28300	30400	27600	31600	38000	33900
7	39000	33900	29100	20600	17400	15000	27500	30300	26300	32300	38200	33900
8	39000	33900	27100	20600	17200	15000	27400	30200	25100	32700	38000	34200
9	39000	34000	25900	20500	17200	15000	27800	30200	26200	33200	38000	35000
10	38800	35600	25600	20300	17100	15000	28500	30200	27300	33700	38100	35900
11	39200	35500	26200	20200	17400	15200	28500	30200	27800	34000	36600	35800
12	39700	36300	26400	20200	17200	11800	28800	29900	28400	34000	33800	35800
13	39700	35600	26000	20200	16900	11000	29000	29800	28500	35800	33400	35900
14	39500	36800	26000	20200	16900	15000	28800	29900	28500	37100	35000	36100
15	39600	37100	25600	20200	16900	15100	28800	30100	28500	38000	36500	36100
16	39400	36500	25600	20200	17100	14900	29000	30000	28500	37800	35700	36000
17	39300	36100	25600	20300	17000	15000	29400	29800	28500	38000	33400	36200
18	39000	35800	25600	20200	16700	16100	29500	29700	28500	37900	32200	37200
19	39000	36200	22000	19300	16400	19000	29500	29600	28700	38000	32500	37400
20	39000	37000	21400	19300	16500	22100	29500	29700	29200	37800	32700	37400
21	39000	37500	21400	18400	16400	25300	29600	29600	29800	37900	32800	37500
22	37800	37500	21400	17400	15600	28200	29700	29500	29900	37500	32700	36800
23	37500	37600	21200	17500	14700	29200	30200	29500	30200	37400	32800	35300
24	37400	37600	21200	17400	14500	29500	30300	29500	30200	37400	33000	35400
25	37500	37500	21300	17400	14900	29900	30000	29800	30100	37400	33700	35600
26	38000	37600	21100	17800	14500	29900	30000	30000	30200	37300	33900	36300
27	38500	37500	21100	17400	14500	29700	30100	29900	30100	37300	33600	37600
28	38600	37800	21000	17400	14600	30200	30400	29900	29700	37300	33900	37400
29	38600	38600	21000	17400	14800	30800	30200	29800	30000	37300	34500	37400
30	38300	40500	20800	17400	---	30700	30100	29100	31300	37200	34500	37300
31	35200	---	20800	17400	---	30200	---	28300	---	37600	34900	---
TOTAL	1201400	1076800	816600	598200	476800	627600	877300	925100	858700	1101700	1092900	1071900
MEAN	38750	35890	26340	19300	16440	20250	29240	29840	28620	35540	35250	35730
MAX	40000	40500	41500	20700	17500	30800	30400	30500	31300	38000	38200	37600
MIN	35200	32600	20800	17400	14500	11000	27400	28300	25100	31500	32200	33500
AC-FT	2383000	2136000	1620000	1187000	945700	1245000	1740000	1835000	1703000	2185000	2168000	2126000

CAL YR 1979 TOTAL 11482810 MEAN 31460 MAX 43900 MIN 9310 AC-FT 22780000
WTR YR 1980 TOTAL 10725000 MEAN 29300 MAX 41500 MIN 11000 AC-FT 21270000

06470500 JAMES RIVER AT LA MOURE, ND

LOCATION.--Lat 46°21'20", long 98°18'15", in NE¼NE¼ sec.11, T.133 N., R.61 W., LaMoure County, Hydrologic Unit 10160003, on left bank 80 ft (24 m) downstream from bridge on State Highway 13, 0.5 mi (0.8 km) west of LaMoure, and 12 mi (19 km) upstream from Cottonwood Creek.

DRAINAGE AREA.--4,390 mi² (11,370 km²), approximately, of which about 2,600 mi² (6,730 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to July 1903 (gage-height record only), April 1950 to current year. Gage-height records for 1902-11 are contained in reports of the National Oceanic and Atmospheric Administration.

REVISED RECORDS.--WSP 1917: Drainage area.

GAGE.--Water-stage recorder and rubble-masonry control. Datum of gage is 1,290.00 ft (393.192 m) National Geodetic Vertical Datum of 1929. See WSP 1729 or 1917 for history of changes prior to Apr. 19, 1950.

REMARKS.--Records fair. Flow regulated by Arrowwood, Jim, and Pipestem Lakes, and Jamestown Reservoir, combined capacity, 393,000 acre-ft (485 hm³). Regulation by Jamestown Reservoir (station 06469000) 85 mi (137 km) upstream since 1953 and by Pipestem Lake, capacity 147,000 acre-ft (181 hm³), since 1973.

AVERAGE DISCHARGE.--30 years (water years 1951-80), 93.3 ft³/s (2.642 m³/s), 67,600 acre-ft/yr (83.4 hm³/yr); median of yearly mean discharges, 66 ft³/s (1.87 m³/s), 47,800 acre-ft/yr (59 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,800 ft³/s (193 m³/s) Apr. 14, 1969, gage height, 16.17 ft (4.929 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Prior to flood of Apr. 14, 1969, a long-time resident said that the flood of May 16, 1950, was the highest since 1881, with stage in either 1942 or 1943 being almost as high owing to large ice jam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 382 ft³/s (10.8 m³/s) Mar. 22, gage height, 8.05 ft (2.454 m); minimum daily, 4.6 ft³/s (0.13 m³/s) Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	240	242	71	31	13	14	172	38	20	32	8.6	198
2	247	269	76	29	13	15	168	34	17	24	8.8	139
3	235	258	85	27	13	16	164	33	16	24	4.6	94
4	220	252	83	27	13	17	154	34	31	28	10	57
5	241	246	87	26	15	18	168	34	43	19	11	39
6	218	238	86	25	16	19	190	32	38	19	9.9	34
7	227	246	83	24	16	21	186	29	36	21	13	28
8	234	213	64	22	17	20	159	28	34	14	12	35
9	228	183	56	20	19	20	130	29	32	16	11	20
10	232	165	50	20	19	24	91	41	26	17	22	17
11	233	181	46	20	19	25	84	20	22	18	22	19
12	233	188	48	20	18	23	54	23	33	13	20	24
13	233	243	41	22	18	19	54	25	41	12	20	44
14	241	272	35	22	17	17	65	22	36	16	16	75
15	241	275	35	19	19	19	54	22	36	12	14	105
16	249	267	45	19	19	23	54	19	39	15	15	102
17	238	251	48	19	18	23	54	23	43	13	23	100
18	247	240	35	20	17	34	43	22	41	14	13	95
19	240	248	31	20	17	81	54	18	34	13	14	100
20	248	197	31	20	17	177	45	17	30	15	20	101
21	244	171	33	20	17	262	43	18	31	18	19	103
22	247	129	36	20	18	372	54	15	27	17	13	106
23	247	100	37	22	19	355	34	16	22	16	15	96
24	250	95	36	25	19	289	34	17	33	19	14	106
25	246	96	34	25	22	262	34	13	32	16	17	98
26	251	109	33	24	23	256	30	21	26	12	9.9	81
27	255	111	33	23	19	256	36	21	30	14	10	71
28	252	103	33	22	18	240	37	18	38	13	10	74
29	258	88	31	17	16	215	36	22	26	7.4	17	83
30	261	76	31	14	---	200	37	19	31	13	15	74
31	299	---	31	13	---	190	---	16	---	9.9	66	---
TOTAL	7535	5752	1504	677	504	3522	2518	739	944	510.3	493.8	2318
MEAN	243	192	48.5	21.8	17.4	114	83.9	23.8	31.5	16.5	15.9	77.3
MAX	299	275	87	31	23	372	190	41	43	32	66	198
MIN	218	76	31	13	13	14	30	13	16	7.4	4.6	17
AC-FT	14950	11410	2980	1340	1000	6990	4990	1470	1870	1010	979	4600

CAL YR 1979 TOTAL 110731.8 MEAN 303 MAX 3690 MIN 7.4 AC-FT 219600
WTR YR 1980 TOTAL 27017.1 MEAN 73.8 MAX 372 MIN 4.6 AC-FT 53590

06470500 JAMES RIVER AT LA MOURE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1957 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: June 1953 to September 1975, October 1976 to current year.
SPECIFIC CONDUCTANCE: October 1976 to current year.

INSTRUMENTATION.--Temperature recorder from June 1953 to September 1975, November 1976 to September 1978.

REMARKS.--Due to recorder malfunctions, continuous water temperature data does not conform to acceptable accuracy standards. Once daily observations recorded by a local observer are being published in lieu of the recorder data.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 33.0°C July 12, 13, 1957; July 23, 1977; minimum, 0.0°C on many days during winter months.
SPECIFIC CONDUCTANCE: Maximum daily, 1,880 micromhos Jan. 31, 1979; minimum daily, 200 micromhos Mar. 24, 25, and 26, 1978.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum daily, 31.0°C July 12; minimum, 0.5°C on many days during the winter.
SPECIFIC CONDUCTANCE: Maximum daily, 1,300 micromhos Mar. 1, 2; minimum daily, 380 micromhos Apr. 1.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT										
02...	1610	225	485	8.3	14.0	30	10.8	190	16	44
NOV										
06...	1700	245	540	8.3	.5	25	12.8	190	13	46
27...	1715	111	650	8.1	.5	20	14.4	270	32	66
JAN										
03...	1230	E27	1010	8.2	1.0	10	17.3	410	40	100
FEB										
05...	1545	E15	1260	7.7	1.0	15	14.4	150	0	35
MAR										
06...	1300	E22	1210	7.6	.5	5	8.7	440	99	110
25...	1720	E250	360	7.3	.5	80	5.2	120	33	30
APR										
01...	1545	183	580	--	1.5	--	--	--	--	--
29...	1820	E53	800	8.3	18.0	40	7.3	310	110	76
JUN										
04...	1100	63	820	8.8	20.0	30	7.6	310	36	65
JUL										
17...	1100	6.4	1000	8.5	24.0	60	5.9	320	220	71
AUG										
12...	1320	16	950	8.5	21.0	20	8.6	310	20	68
SEP										
09...	1330	35	490	8.7	20.5	15	7.8	160	32	40

06470500 JAMES RIVER AT LA MOURE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	SODIUM+ POTAS- SIUM DIS- SOLVED (MG/L AS NA) (00933)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
02...	19	31	25	1.0	41	10	170	85	7.9	.1
NOV										
06...	19	36	27	1.1	47	11	180	96	12	.1
27...	26	45	26	1.2	56	11	240	120	16	.2
JAN										
03...	34	76	28	1.6	86	9.9	370	190	16	.2
FEB										
05...	18	260	79	9.4	260	4.9	500	160	15	.3
MAR										
06...	40	100	33	2.1	110	10	340	240	54	.3
25...	11	24	26	1.0	36	12	87	79	14	.0
APR										
01...	--	--	--	--	--	--	--	--	--	--
29...	30	56	27	1.4	67	11	200	200	24	.2
JUN										
04...	35	92	34	2.3	100	12	270	170	47	.3
JUL										
17...	35	100	39	2.4	110	12	--	180	51	.5
AUG										
12...	34	90	38	2.2	100	11	290	150	48	.3
SEP										
09...	15	35	31	1.2	43	8.1	130	76	17	.2

06470500 JAMES RIVER AT LA MOURE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	BORON, DIS- SOLVED (UG/L AS B) (01020)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)
OCT										
02...	2.8	300	302	.41	182	.04	.080	90	46	28
NOV										
06...	5.5	355	336	.48	235	.46	.080	140	17	11
27...	9.8	411	440	.56	123	.38	.040	130	8	2.4
JAN										
03...	10	708	667	.96	--	.79	.040	230	26	--
FEB										
05...	44	705	835	.96	--	.04	.280	650	15	--
MAR										
06...	23	839	785	1.14	--	.69	.070	360	--	--
25...	8.6	240	234	.33	--	.73	.460	140	--	--
APR										
01...	--	--	--	--	--	--	--	--	--	--
29...	5.8	495	523	.67	71.0	.01	.050	200	48	--
JUN										
04...	19	638	603	.87	109	.02	.160	310	20	3.4
JUL										
17...	34	670	544	.91	11.6	.03	.870	420	23	.40
AUG										
12...	26	639	602	.87	27.6	.00	.170	310	95	4.1
SEP										
09...	16	300	287	.41	28.3	.38	.010	180	87	8.2

06470500 JAMES RIVER AT LA MOURE, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	480	500	650	930	1170	1300	380	750	960	1000	1000	930
2	480	490	660	960	1170	1300	400	760	980	1100	1010	950
3	480	490	660	1010	1180	1240	400	800	990	1090	1000	920
4	500	500	680	1050	1200	1200	440	820	990	1100	990	840
5	500	500	700	1050	1200	1150	440	840	990	1100	980	620
6	490	490	700	1080	1220	1150	460	840	980	1110	980	580
7	500	490	710	1110	1240	1150	480	850	980	1110	1010	400
8	500	490	720	1110	1240	1000	500	875	960	1100	1000	460
9	500	500	740	1100	1220	1050	500	875	960	1100	990	470
10	490	500	750	1130	1220	1050	530	880	950	1070	990	450
11	500	500	760	1160	1200	1000	540	870	980	1040	990	460
12	490	500	780	1170	1200	1000	550	870	1000	1060	990	490
13	490	490	780	1200	1200	960	580	880	1010	1050	1000	555
14	490	490	790	1200	1220	950	600	890	1000	1040	990	560
15	480	490	800	1200	1220	800	610	890	1010	1040	980	600
16	480	500	800	1200	1200	800	640	900	1020	1030	920	690
17	480	500	790	1200	1180	780	650	900	1000	1030	920	780
18	490	520	790	1150	1180	760	680	950	1000	1020	920	750
19	480	520	780	1100	1140	720	700	980	990	1020	920	720
20	480	540	750	1100	1140	700	700	980	990	1000	910	710
21	500	550	750	1130	1150	650	680	1000	980	1000	910	665
22	510	556	780	1100	1150	560	680	1020	990	1000	900	625
23	500	560	825	1120	1130	460	700	1040	1000	1000	900	610
24	490	575	825	1120	1150	460	700	1050	1020	1000	910	620
25	490	590	860	1100	1160	450	710	1050	1020	990	910	640
26	500	600	880	1130	1160	450	700	1060	1030	1000	900	660
27	490	600	900	1130	1170	420	700	1040	1040	990	890	660
28	480	620	900	1140	1170	400	700	1020	1050	990	890	650
29	480	650	900	1140	1170	400	720	1000	1050	1000	910	650
30	480	650	910	1160	---	390	740	1000	1070	1010	920	660
31	480	---	910	1180	---	385	---	980	---	1000	930	---
MEAN	490	532	782	1120	1180	812	594	925	1000	1040	950	646

06470500 JAMES RIVER AT LA MOURE, ND--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	4.0	1.0	1.0	.5	1.0	1.5	15.0	20.0	24.0	25.0	19.0
2	13.0	3.0	1.0	.5	1.0	.5	1.5	15.0	20.0	24.0	25.0	18.5
3	12.0	2.0	1.0	.5	1.0	1.0	1.5	15.0	20.0	24.0	24.0	18.5
4	12.0	2.0	1.0	.5	1.0	1.0	1.5	14.0	21.0	25.0	24.0	19.0
5	11.0	2.0	1.0	.5	1.0	1.0	1.5	14.0	22.0	25.0	22.0	20.0
6	12.0	2.0	1.0	.5	1.0	1.0	1.5	14.0	21.0	25.0	22.0	22.0
7	11.0	1.5	1.0	.5	1.0	1.0	1.5	13.0	21.0	24.0	23.0	23.0
8	10.0	1.5	1.0	.5	1.0	1.0	1.0	13.0	21.0	24.0	23.0	23.5
9	10.0	1.5	1.0	.5	1.0	1.0	1.5	13.0	21.5	23.0	22.0	23.0
10	10.0	1.0	1.0	.5	1.0	.5	1.5	13.0	22.0	29.0	22.0	23.5
11	9.0	1.0	1.0	.5	1.0	.5	2.0	12.0	28.0	29.0	22.0	22.0
12	8.0	1.0	1.0	1.0	.5	1.0	2.0	13.0	27.0	31.0	21.0	18.0
13	8.0	1.0	.5	2.0	.5	1.0	2.0	14.0	27.0	30.0	22.0	16.0
14	7.0	1.0	.5	1.5	1.0	1.0	3.0	14.0	25.0	29.0	20.0	15.0
15	8.0	1.0	.5	1.0	1.0	1.0	3.0	14.0	25.0	28.0	20.0	14.0
16	8.0	1.0	.5	1.0	1.0	1.0	3.0	16.0	24.0	26.0	18.0	13.0
17	9.0	1.5	1.0	1.0	1.0	1.0	4.0	16.0	23.0	26.0	18.0	12.0
18	10.0	1.0	1.0	1.0	1.0	1.0	5.0	18.0	23.0	25.0	20.0	12.5
19	9.0	1.0	1.0	1.0	1.0	1.0	5.0	18.0	22.0	23.0	22.0	12.0
20	9.0	1.0	1.5	1.0	1.0	1.0	5.5	19.0	21.5	23.0	22.0	13.0
21	8.0	1.0	1.5	1.0	1.0	1.0	6.0	19.0	22.0	23.0	24.0	13.0
22	8.0	1.0	1.0	.5	1.0	1.0	6.0	21.0	23.0	23.0	25.0	14.0
23	8.0	1.0	1.0	.5	1.0	1.5	8.0	21.0	24.0	24.0	25.0	14.0
24	7.5	1.0	1.5	1.0	1.0	1.5	12.0	21.0	26.0	24.0	24.0	14.5
25	7.0	1.0	1.5	.5	.5	1.5	12.0	21.0	25.0	24.0	24.0	15.0
26	7.5	1.0	2.0	.5	1.0	1.5	13.0	22.0	22.5	24.5	22.0	15.0
27	7.0	1.0	2.0	.5	1.0	1.5	15.0	22.0	22.0	24.0	22.0	14.0
28	7.5	1.0	2.5	.5	1.0	1.5	15.0	21.0	23.0	24.0	21.0	11.0
29	7.0	1.0	2.0	.5	1.0	1.5	15.0	20.0	23.0	25.0	20.0	11.0
30	6.0	1.0	1.5	.5	---	1.5	15.0	20.5	23.0	25.0	20.0	10.0
31	4.0	---	1.0	.5	---	1.5	---	20.0	---	25.0	19.0	---
MEAN	9.0	1.5	1.0	.5	1.0	1.0	5.5	17.0	23.0	25.0	22.0	16.5

06470878 JAMES RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 45°56'10", long 98°10'26", in SE¼SE¼ sec.34, T.129 N., R.60 W., Dickey County, Hydrologic Unit 10160003, at bridge on North Dakota-South Dakota State line road 6.5 mi (9.8 km) south, and 1 mi (1.6 km) west from Ludden, ND.

DRAINAGE AREA.--6,650 mi² (17,200 km²), approximately, of which about 2,800 mi² (7,300 km²) is probably noncontributing.

PERIOD OF RECORD.--Water years 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,000 micromhos Mar. 15, 16, 1979; minimum daily, 242 micromhos Apr. 25, 1975.
WATER TEMPERATURES: Maximum daily, 28.5°C June 12, 1976, July 5, 1977; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,760 micromhos Mar. 6; minimum daily, 380 micromhos Apr. 8.
WATER TEMPERATURES: Maximum daily, 28.0°C July 9; minimum daily, 0.0°C on many days during winter months.

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT										
01...	1625	--	535	8.5	15.0	35	9.8	190	15	45
NOV										
05...	1545	--	520	8.5	2.0	20	14.5	190	11	45
26...	1745	--	550	8.5	2.0	15	14.6	230	25	54
JAN										
02...	1400	--	860	8.4	1.0	25	16.3	350	41	81
FEB										
04...	1750	--	1220	7.5	2.0	20	30.4	520	98	110
MAR										
03...	1600	--	1700	7.8	.5	5	26.7	760	120	180
26...	1310	--	670	7.5	.0	40	4.3	230	40	56
APR										
28...	1615	--	630	8.6	15.0	30	11.4	230	20	54
JUN										
02...	1750	--	640	8.5	20.5	15	8.2	260	10	53
JUL										
17...	1620	--	935	8.6	25.0	140	10.0	290	11	59
SEP										
08...	1725	--	1080	9.0	24.0	25	9.4	330	41	65

06470878 JAMES RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT										
01...	20	37	39	1.2	47	10	180	99	12	.2
NOV										
05...	19	34	27	1.1	45	11	180	90	11	.1
26...	22	39	26	1.1	50	11	200	110	12	.2
JAN										
02...	36	64	39	1.5	77	13	310	150	26	.2
FEB										
04...	59	110	31	2.1	130	16	420	240	49	.2
MAR										
03...	76	170	32	2.7	190	16	440	300	79	.3
26...	22	55	33	1.6	66	11	190	120	26	.1
APR										
28...	23	49	30	1.4	60	11	210	110	21	.2
JUN										
02...	31	64	33	1.7	78	14	250	130	30	.2
JUL										
17...	35	100	41	2.6	120	17	280	160	53	.5
SEP										
08...	41	120	42	2.9	140	19	290	190	67	.3

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	BORON, DIS-SOLVED (UG/L AS B) (01020)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT										
01...	.8	345	332	.47	--	.01	.010	140	--	--
NOV										
05...	1.2	331	320	.45	--	.01	.010	120	--	--
26...	5.3	355	375	.48	--	.17	.090	120	--	--
JAN										
02...	6.6	586	564	.80	--	.05	.020	170	--	--
FEB										
04...	2.4	856	839	1.16	--	.00	.020	310	--	--
MAR										
03...	1.8	1190	1290	1.62	--	.02	.010	460	--	--
26...	8.5	429	416	.58	--	.62	.210	220	--	--
APR										
28...	.8	383	395	.52	--	.02	.040	140	--	--
JUN										
02...	5.6	502	478	.68	--	.03	.170	240	--	--
JUL										
17...	30	656	644	.89	--	.11	.080	350	--	--
SEP										
08...	13	674	690	.92	--	.01	.200	360	--	--

06470878 JAMES RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN.	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	560	530	580	850	1100	1700	500	640	790	890	---	1090
2	560	530	560	860	1180	1710	480	650	800	900	---	1130
3	560	530	570	890	1190	---	440	660	790	920	---	1130
4	570	540	590	880	1200	1750	410	660	800	920	---	1130
5	560	540	600	910	1200	1750	400	670	800	930	---	1130
6	560	560	600	930	1210	1760	400	690	800	930	---	1120
7	560	570	610	950	1160	1760	390	700	790	940	---	1110
8	560	560	620	990	1170	1740	380	710	800	920	---	1110
9	560	540	650	1000	1180	1710	390	730	810	900	---	1120
10	550	560	650	1050	1200	1680	410	730	780	960	---	1130
11	550	560	660	1090	1220	1600	410	730	760	910	---	1140
12	550	570	690	1080	1250	1650	430	730	730	920	---	1110
13	560	570	690	1080	1300	1630	420	750	750	930	---	1120
14	560	580	690	1080	1500	1610	430	750	760	940	---	1130
15	550	590	690	1050	1550	1550	430	750	780	940	---	1130
16	560	600	690	1040	1600	1550	430	750	800	940	---	1150
17	560	590	700	1050	1650	1500	440	750	820	950	1190	1150
18	540	590	740	1060	1690	1440	450	760	830	950	1190	1150
19	550	580	750	1060	1700	1440	460	760	840	960	1180	1160
20	540	580	760	1070	1680	1440	490	760	850	950	1170	1160
21	540	570	830	1000	1640	1280	520	760	850	960	1140	1150
22	540	580	840	1020	1640	1030	550	760	860	940	1140	1140
23	550	580	820	1020	1650	990	580	770	850	960	1120	1120
24	550	550	830	1030	1670	800	610	740	840	---	1120	1110
25	540	550	830	1040	1680	730	610	740	850	---	1110	1040
26	540	560	850	1040	1680	650	620	760	850	---	1050	1040
27	530	550	850	1060	1680	690	620	790	860	---	1040	1030
28	520	550	840	1080	1690	650	630	790	870	---	1030	1010
29	520	570	850	1090	1690	610	630	780	880	---	1040	960
30	520	570	850	1080	---	550	640	790	890	---	1060	940
31	515	---	840	1040	---	530	---	790	---	---	1080	---
MEAN	548	563	720	1020	1450	1320	487	735	816	930	1110	1100

06470878 JAMES RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.5	2.5	.5	2.0	.5	.0	2.0	22.0	19.0	22.5	---	16.0
2	15.0	2.0	2.0	1.0	1.0	1.0	3.0	19.5	20.0	23.5	---	16.5
3	12.5	2.0	3.5	1.0	.5	---	2.0	19.0	20.0	22.0	---	20.5
4	10.5	3.0	3.5	1.0	.5	.5	2.5	24.0	20.5	21.5	---	16.5
5	11.0	3.5	1.5	1.0	1.5	.5	3.0	19.0	20.5	26.0	---	17.0
6	10.0	4.0	3.0	1.0	1.0	.5	2.5	13.5	20.5	25.0	---	20.0
7	11.0	3.5	3.0	.0	.5	1.0	2.0	11.0	18.0	25.5	---	22.5
8	9.5	2.0	2.5	.0	1.0	1.0	1.5	9.0	19.0	26.0	---	24.0
9	9.0	2.0	3.5	.0	.5	1.0	2.0	13.0	18.0	28.0	---	16.5
10	9.0	3.0	4.0	.0	.0	1.0	3.5	12.5	20.5	26.0	---	16.5
11	10.0	3.0	1.0	.0	.0	.5	3.0	11.5	21.0	27.0	---	18.0
12	8.0	3.5	1.5	.0	.5	1.0	4.5	13.5	22.0	24.5	---	17.0
13	6.0	4.0	2.5	1.0	.5	1.0	4.0	14.0	23.5	25.5	---	16.0
14	6.5	4.0	3.0	1.0	1.0	1.5	6.5	13.0	22.5	27.5	---	15.5
15	10.0	4.0	2.0	2.0	.5	1.5	6.5	15.0	21.0	24.0	---	15.0
16	8.5	4.0	.0	1.0	.5	.5	8.5	15.5	22.0	23.0	---	13.5
17	9.0	3.0	.5	1.0	.5	1.5	12.0	15.0	22.0	24.0	19.5	13.0
18	9.5	4.0	3.0	2.5	.5	1.5	15.0	16.5	21.5	23.5	20.0	13.0
19	8.5	5.5	4.0	2.0	.5	3.5	12.5	18.5	20.0	23.0	25.0	12.5
20	10.5	3.0	4.5	1.5	.5	1.5	15.5	18.0	20.0	20.5	23.0	13.0
21	7.0	2.0	4.5	1.0	.5	1.5	16.5	18.5	21.5	20.5	19.5	14.0
22	6.5	1.5	5.0	1.5	.5	.5	14.0	19.5	22.0	20.5	20.0	13.5
23	5.5	1.5	3.0	1.5	1.0	.5	13.5	19.5	24.0	23.0	21.5	12.0
24	5.5	3.0	2.5	1.0	1.0	.5	13.5	20.0	23.0	---	22.0	12.5
25	6.0	3.0	2.5	.5	.5	.5	13.5	20.5	25.5	---	23.5	12.0
26	5.5	2.0	4.0	.0	1.0	1.0	14.0	21.0	25.0	---	22.0	11.5
27	7.5	2.5	4.0	.5	.0	1.0	14.0	21.5	24.0	---	22.0	11.5
28	8.5	1.0	3.5	.5	.0	.5	16.0	22.0	24.5	---	22.5	12.0
29	8.5	.5	3.0	.5	.0	1.0	16.5	21.5	22.5	---	21.0	15.0
30	7.0	1.0	3.0	.5	---	1.5	17.0	19.0	22.0	---	20.5	15.5
31	4.5	---	3.0	.0	---	2.0	---	19.5	---	---	19.0	---
MEAN	9.0	3.0	3.0	1.0	.5	1.0	8.5	17.5	21.5	24.0	21.5	15.5

06471000 JAMES RIVER AT COLUMBIA, SD

LOCATION.--Lat 45°37'05", long 98°19'30", in NE¼NW¼ sec.29, T.125 N., R.62 W., Brown County, Hydrologic Unit 10160003, on left bank 10 ft (3 m) downstream from highway bridge, 0.8 mi (1.3 km) northwest of Columbia, 2.4 mi (3.9 km) upstream from Chicago and North Western Transportation Company bridge, 3.6 mi (5.8 km) upstream from Elm River, and 9.4 mi (15.1 km) downstream from Columbia Road Dam.

DRAINAGE AREA.--7,050 mi² (18,300 km²), approximately, of which about 3,000 mi² (7,770 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,275.01 ft (388.623 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 5, 1957, nonrecording gage at same site and datum.

REMARKS.--Records fair, except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm³), 168 mi (270 km) upstream since May 1953.

AVERAGE DISCHARGE.--35 years, 109 ft³/s (3.087 m³/s), 78,970 acre-ft/yr (97.4 hm³/yr); median of yearly mean discharges, 64 ft³/s (1.81 m³/s), 46,400 acre-ft/yr (57 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,420 ft³/s (153 m³/s) May 24, 25, 1950, gage height, 16.89 ft (5.148 m), from graph based on gage readings; maximum gage height, 17.09 ft (5.209 m) Apr. 22, 1969; maximum daily reverse flow, 1,860 ft³/s (52.7 m³/s) Apr. 8, 1952, backwater from Elm River.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 293 ft³/s (8.30 m³/s) Apr. 16, gage height, 9.22 ft (2.810 m); no flow June 29 to Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155	251	215	3.7	.04	9.0	60	20	17	.00	.00	.00
2	156	263	213	3.6	.05	10	64	20	19	.00	.00	.00
3	156	269	215	3.5	.06	14	90	19	22	.00	.00	.00
4	157	271	213	3.4	.06	14	120	19	20	.00	.00	.00
5	158	272	212	3.5	.09	13	175	18	15	.00	.00	.00
6	158	273	212	2.8	.11	20	170	22	12	.00	.00	.00
7	158	276	209	1.8	.14	21	148	21	11	.00	.00	.00
8	160	276	196	1.2	.15	22	142	23	11	.00	.00	.00
9	162	274	196	.95	.15	23	173	17	8.2	.00	.00	.00
10	162	276	196	1.0	.16	23	214	15	7.3	.00	.00	.00
11	162	277	181	1.1	.16	22	233	25	7.1	.00	.00	.00
12	163	274	167	1.4	.50	22	230	18	6.5	.00	.00	.00
13	163	271	168	1.9	3.6	22	262	18	5.6	.00	.00	.00
14	165	271	168	2.3	7.2	22	274	18	3.6	.00	.00	.00
15	166	271	159	2.5	11	24	267	15	3.4	.00	.00	.00
16	169	270	154	4.3	12	27	291	15	3.7	.00	.00	.00
17	185	268	148	4.6	12	28	289	14	4.1	.00	.00	.00
18	199	267	140	5.2	12	33	278	14	3.0	.00	.00	.00
19	204	264	139	3.4	11	42	246	14	2.0	.00	.00	.00
20	209	261	139	3.2	11	46	174	12	1.5	.00	.00	.00
21	210	259	137	2.0	11	42	94	10	1.7	.00	.00	.00
22	212	258	101	1.5	11	29	39	8.9	2.0	.00	.00	.00
23	214	257	46	1.0	10	11	36	6.9	1.5	.00	.00	.00
24	216	255	18	.60	10	2.3	26	8.0	1.3	.00	.00	.00
25	213	251	9.0	.32	9.4	1.0	22	8.7	.86	.00	.00	.00
26	213	247	6.3	.25	9.3	4.6	22	12	.38	.00	.00	.00
27	215	244	4.5	.09	9.2	19	21	13	.31	.00	.00	.00
28	217	232	3.7	.09	9.2	28	21	13	.04	.00	.00	.00
29	218	218	3.7	.06	9.2	35	22	14	.00	.00	.00	.00
30	221	217	3.6	.05	---	43	20	25	.00	.00	.00	.00
31	236	---	3.6	.04	---	49	---	24	---	.00	.00	---
TOTAL	5752	7833	3976.4	61.35	169.77	720.9	4223	500.5	191.09	.00	.00	.00
MEAN	186	261	128	1.98	5.85	23.3	141	16.1	6.37	.000	.000	.000
MAX	236	277	215	5.2	12	49	291	25	22	.00	.00	.00
MIN	155	217	3.6	.04	.04	1.0	20	6.9	.00	.00	.00	.00
AC-FT	11410	15540	7890	122	337	1430	8380	993	379	.00	.00	.00

CAL YR 1979 TOTAL 117793.63 MEAN 323 MAX 2310 MIN -295 AC-FT 233600
WTR YR 1980 TOTAL 23428.01 MEAN 64.0 MAX 291 MIN .00 AC-FT 46470

06471000 JAMES RIVER AT COLUMBIA, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-64, 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to September 1979.
WATER TEMPERATURES: October 1966 to September 1978.

REMARKS.--No flow July 27 to Sept. 30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,500 micromhos Mar. 1, 1974, Jan. 27-29, Jan. 31, 1979; minimum daily, 240 micromhos Mar. 17, 1972.
WATER TEMPERATURES: Maximum daily, 32.0°C June 29, July 10, 1970; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)
OCT 24...	1510	217	720	7.7	6.0	2.0	12.6	20	70	250	0	56
NOV 20...	1445	260	760	6.9	2.5	1.4	14.0	K5	35	240	24	55
DEC 18...	1500	140	890	6.8	1.0	1.3	17.0	K2	K6	300	27	68
JAN 09...	1630	.95	1100	6.9	.5	18	15.4	2	--	520	72	120
FEB 07...	1430	.14	1750	7.1	.5	2.2	.0	80	285	660	89	150
MAR 06...	1630	20	1240	7.3	.5	1.5	10.0	K3	K19	460	66	100
APR 01...	1700	60	580	7.5	1.0	4.1	7.5	K2	130	230	41	53
MAY 14...	1330	18	680	8.7	16.0	4.0	14.4	K30	K9	230	21	53
JUN 18...	1700	2.7	680	9.4	25.0	4.3	--	120	80	260	25	56

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)
OCT 24...	27	50	41	1.4	12	62	260	63	20	.2	11	432
NOV 20...	26	48	40	1.3	13	61	220	110	21	.2	4.6	402
DEC 18...	31	53	38	1.3	15	68	270	130	19	.2	1.8	498
JAN 09...	54	93	38	1.8	20	110	450	230	40	.2	6.5	874
FEB 07...	69	120	27	2.0	25	150	570	310	45	.3	5.6	1070
MAR 06...	50	81	27	1.7	18	99	390	190	30	.2	4.2	736
APR 01...	24	38	25	1.1	10	--	190	94	18	.1	4.1	379
MAY 14...	24	46	29	1.3	12	--	210	98	25	.2	5.3	424
JUN 18...	28	56	31	1.5	14	--	230	110	27	.2	4.2	453

K Non-ideal colony count.

06471000 JAMES RIVER AT COLUMBIA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 24...	396	.59	253	--	.02	.04	.00	.00	.03	.04	1.2	1.3
NOV 20...	410	.55	.23	--	.06	.05	.02	.03	.10	.12	.67	.78
DEC 18...	480	.68	202	--	.01	.06	.02	.03	.02	.02	.91	1.2
JAN 09...	836	1.19	2.24	--	.04	.03	.07	.09	.09	.11	1.4	1.8
FEB 07...	1070	1.46	.43	--	.04	.06	.14	.18	.14	.17	2.0	2.1
MAR 06...	709	1.00	41.7	--	.14	.10	.12	.15	.10	.12	1.5	1.3
APR 01...	357	.52	102	--	.02	.03	.27	.35	.34	.41	.83	2.5
MAY 14...	390	.58	20.0	--	.03	.01	.03	.04	.04	.05	1.1	1.8
JUN 18...	434	.62	3.30	--	.04	.03	.04	.05	.04	.05	1.5	2.5

DATE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, ORTHOPHOSPHATE TOTAL (MG/L AS P) (70507)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P) (00673)	PHOSPHORUS, HYDRO. + ORTHO DISSOL. (MG/L AS P) (00677)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)
OCT 24...	1.2	.10	1.3	1.2	1.3	5.9	--	--	--	.150	.150
NOV 20...	.69	.19	.88	.75	.93	4.1	--	--	--	.050	.070
DEC 18...	.93	.27	1.2	.94	1.3	5.6	--	--	--	.180	.430
JAN 09...	1.5	.40	1.9	1.5	1.9	8.5	--	--	--	.120	.130
FEB 07...	2.1	.10	2.2	2.1	2.3	10	--	--	--	.100	.150
MAR 06...	1.6	.00	1.4	1.7	1.5	6.6	--	--	--	.120	.130
APR 01...	1.1	1.7	2.8	1.1	2.8	13	--	--	--	.170	.280
MAY 14...	1.1	.70	1.8	1.1	1.8	8.0	--	--	--	.230	.260
JUN 18...	1.5	1.0	2.5	1.5	2.5	11	--	--	--	.010	.450

DATE	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, ORTHOPHOSPHATE TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70958)	BIOMASS CHLOROPHYLL RATIO PERIPHYTON (UNITS) (70950)
OCT 24...	.46	--	--	.1	--	--	--	--	--	--	--
NOV 20...	.21	--	--	--	16	--	--	--	--	--	--
DEC 18...	1.3	--	--	--	9.7	480	--	--	--	--	--
JAN 09...	.40	--	28	1.1	--	--	--	--	--	--	--
FEB 07...	.46	--	--	--	31	--	--	--	--	--	--
MAR 06...	.40	--	--	--	20	--	--	--	--	--	--
APR 01...	.86	--	12	1.4	--	850000	--	--	--	--	--
MAY 14...	.80	--	--	--	13	460	--	--	--	--	--
JUN 18...	1.4	--	--	--	--	920	--	--	--	--	--

06471000 JAMES RIVER AT COLUMBIA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)
OCT								
24...	1510	217	--	--	--	--	--	--
NOV								
20...	1445	260	39	.02	95	--	--	--
DEC								
18...	1500	140	61	25	--	78	100	--
JAN								
09...	1630	.95	111	.28	--	73	100	--
FEB								
07...	1430	.14	266	.12	--	73	78	100
MAR								
06...	1630	20	73	4.1	--	92	100	--
APR								
01...	1700	60	30	8.1	98	--	--	--
MAY								
14...	1330	18	56	2.6	66	--	--	--
JUN								
18...	1700	2.7	--	--	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) (01026)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)
OCT											
24...	1510	3	0	3	0	0	<1	0	0	0	2
JAN											
09...	1630	2	1	1	0	0	<1	0	0	0	3
APR											
01...	1700	2	1	1	1	0	<1	0	0	0	2

DATE	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)
OCT											
24...	0	<3	0	0	2	140	<10	0	0	0	30
JAN											
09...	0	4	0	0	0	1100	50	[illegible]	9	0	1200
APR											
01...	0	<3	4	3	1	260	90	5	3	0	1600

DATE	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY DISSOLVED (UG/L AS HG) (71890)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
OCT											
24...	20	10	.1	.1	.0	0	0	0	0	0	7
JAN											
09...	100	1100	.0	.0	.0	0	0	0	40	40	5
APR											
01...	0	1700	.0	.0	.0	0	0	0	10	6	4

< Less than.

06471000 JAMES RIVER AT COLUMBIA, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	MAY 23,79		JUN 12,79		JUL 18,79		AUG 15,79		SEP 12,79	
TIME	1130		1700		1300		0945		1100	
TOTAL CELLS/ML	610		13		1000		2000		4000	
DIVERSITY: DIVISION	1.4		0.0		1.5		1.3		0.8	
.CLASS	1.4		0.0		1.5		1.3		0.8	
..ORDER	1.6		0.0		1.7		1.4		0.0	
...FAMILY	2.0		0.0		1.9		1.8		0.0	
....GENUS	2.3		0.0		1.9		2.0		0.0	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-
...COELASTRACEAE										
....COELASTRUM	--	-	--	-	--	-	--	-	40	1
...HYDRODICTYACEAE										
....PEDIASTRUM	--	-	--	-	--	-	100	5	*	0
...OOCYSTACEAE										
....ANKISTRODESMUS	13	2	13#	100	86	9	52	3	45	1
....CHLORELLA	--	-	--	-	--	-	--	-	81	2
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	*	0
....SELENASTRUM	--	-	--	-	--	-	13	1	190	5
....TREUBARIA	--	-	--	-	--	-	--	-	--	-
....WESTELLA	--	-	--	-	--	-	310#	16	--	-
...SCENEDESMACEAE										
....CRUCIGENIA	260#	43	--	-	--	-	--	-	--	-
....SCENEDESMUS	52	9	--	-	29	3	100	5	220	6
....TETRASTRUM	--	-	--	-	--	-	--	-	20	1
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CARTERIA	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	13	2	--	-	--	-	13	1	*	0
...VOLVOCACEAE										
....PANDORINA	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....COSMARIUM	--	-	--	-	14	1	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	13	2	--	-	110	11	26	1	45	1
....MELOSIRA	--	-	--	-	--	-	--	-	20	1
..PENNALES										
...ACHNANTHACEAE										
....COCCONEIS	--	-	--	-	--	-	13	1	--	-
...EUNOTIACEAE										
....EUNOTIA	--	-	--	-	14	1	--	-	--	-
...NAVICULACEAE										
....NAVICULA	--	-	--	-	--	-	--	-	*	0
...NITZSCHIACEAE										
....NITZSCHIA	64	11	--	-	43	4	26	1	*	0
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE	--	-	--	-	--	-	--	-	*	0
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	140#	23	--	-	14	1	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	52	9	--	-	43	4	52	3	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	--	-	--	-	13	1	--	-
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	640#	64	--	-	--	-
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	--	-	--	-	1200#	63	2600#	65
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	660#	17
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	--	-	13	1	--	-
....EUTREPTIA	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06471000 JAMES RIVER AT COLUMBIA, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	DEC 18,79		APR 1,80		MAY 14,80		JUN 18,80	
TIME	1500		1700		1330		1700	
TOTAL CELLS/ML	480		850000		460		920	
DIVERSITY: DIVISION	1.2		0.0		0.7		1.8	
.CLASS	1.2		0.0		0.7		1.8	
..ORDER	1.4		0.1		1.4		2.1	
...FAMILY	1.7		0.1		2.1		2.8	
....GENUS	2.4		0.1		2.3		2.9	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	230#	50	13	1
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	25	5	--	-	--	-	--	-
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE								
....PEDIASTRUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	210#	44	--	-	14	3	--	-
....CHLORELLA	35	7	--	-	--	-	--	-
....KIRCHNERIELLA	55	11	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	26	3
....TREUBARIA	--	-	*	0	--	-	--	-
....WESTELLA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....CRUCIGENIA	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	--	-	58	13	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	--	-	--	-	58	13	--	-
....CHLAMYDOMONAS	--	-	*	0	29	6	140#	15
...VOLVOCACEAE								
....PANDORINA	--	-	--	-	--	-	210#	23
..ZYGNEMATALES								
...DESMIDIACEAE								
....COSMARIUM	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	20	4	--	-	--	-	13	1
....MELOSIRA	--	-	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	--	-	--	-	26	3
...EUNOTIACEAE								
....EUNOTIA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	--	-	--	-	26	3
...NITZSCHIACEAE								
....NITZSCHIA	--	-	*	0	14	3	13	1
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE	--	-	--	-	--	-	--	-
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	14	3	63	7
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	43	9	160#	17
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	210#	23
....ANACYSTIS	81#	17	--	-	--	-	26	3
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	50	10	840000#	99	--	-	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	--	-	--	-
....EUTREPTIA	5	1	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06471000 JAMES RIVER AT COLUMBIA, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	740	710	690	1070	1500	1180	810	870	960	740		
2	730	700	670	1100	1530	1720	860	870	950	730		
3	730	800	680	1050	---	1160	690	870	950	660		
4	730	850	680	1110	---	1110	690	870	800	650		
5	740	700	680	1060	---	1140	890	870	980	650		
6	740	690	690	1120	---	1110	910	---	950	660		
7	740	630	670	1090	---	1720	950	870	910	660		
8	750	790	660	1140	---	1310	910	870	970	660		
9	750	780	640	1080	---	1280	890	870	900	670		
10	740	770	640	1080	---	1280	860	870	810	650		
11	730	780	650	1070	---	1280	820	870	760	660		
12	760	710	660	1190	---	2300	800	870	810	660		
13	750	790	670	1190	1410	1310	770	870	720	660		
14	750	790	660	1340	1370	2460	800	870	950	660		
15	750	750	670	1340	1350	1320	800	870	690	640		
16	750	740	740	1340	1400	1550	730	870	710	660		
17	760	700	710	1340	1410	1150	820	870	690	720		
18	760	670	740	1340	1400	1140	800	870	740	740		
19	760	690	710	1310	1440	1130	710	870	740	760		
20	760	650	710	1300	1440	850	790	870	740	760		
21	770	650	710	1300	1400	460	810	870	740	770		
22	760	670	730	1300	1420	1090	770	870	740	760		
23	760	690	750	970	1080	1170	690	870	700	760		
24	750	690	710	970	1090	850	660	870	730	760		
25	740	710	710	970	1090	1730	690	870	650	810		
26	740	710	800	960	1090	1050	690	860	670	740		
27	740	750	650	1010	1410	970	690	850	660	---		
28	740	690	670	1010	1420	990	700	850	660	---		
29	740	720	710	1100	1420	1010	760	850	730	---		
30	740	710	720	1110	---	880	690	850	680	---		
31	740	---	710	1110	---	920	---	915	---	---		
MEAN	746	722	709	1140	1350	1240	782	869	790	702		

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0	.0	.0	.0	.0	.0	2.0	18.0	18.0	22.0		
2	13.0	.0	.0	.0	.0	.0	2.0	18.0	20.0	21.0		
3	11.0	.0	.0	.0	---	.0	1.0	19.0	17.0	22.0		
4	9.0	.0	.0	.0	---	.0	1.0	18.0	18.0	23.0		
5	10.0	.0	1.0	.0	---	.0	1.0	17.0	20.0	24.0		
6	9.0	.0	1.0	.0	---	.0	3.0	17.0	21.0	24.0		
7	9.0	.0	1.0	.0	---	.0	5.0	11.0	17.0	26.0		
8	11.0	.0	.0	.0	---	.0	3.0	10.0	17.0	23.0		
9	9.0	.0	1.0	.0	---	.0	2.0	13.0	16.5	22.0		
10	11.0	.0	1.5	.0	---	.0	3.0	13.0	17.0	24.0		
11	9.0	.0	.0	.0	---	.0	3.0	10.0	21.0	26.0		
12	8.0	.0	.0	.0	---	.0	3.0	13.0	19.0	20.0		
13	8.0	.0	.0	.0	.0	.0	3.0	11.0	24.0	24.0		
14	10.0	.0	.0	.5	.0	.0	5.0	12.0	21.0	26.0		
15	9.0	1.0	.0	1.0	.0	.0	7.0	14.0	20.0	23.0		
16	10.0	1.0	.0	1.0	.0	.0	8.0	15.0	21.0	2.0		
17	9.0	1.0	.0	.0	.0	.0	8.0	15.0	20.0	24.0		
18	10.0	.0	.0	.0	.0	.0	10.0	14.0	22.0	23.0		
19	6.0	1.0	.0	.0	.0	.0	11.0	14.0	18.0	24.0		
20	10.0	2.0	.5	.0	.0	2.0	13.0	15.0	20.0	20.0		
21	7.0	1.0	1.0	.0	.0	2.0	15.0	16.0	20.0	19.0		
22	5.0	.0	1.0	.0	.0	1.0	17.0	18.0	20.0	18.0		
23	6.5	.0	.0	.0	.0	.0	10.0	18.0	25.0	22.0		
24	6.0	.5	.0	.5	.0	.0	9.0	19.0	24.0	24.0		
25	5.0	.0	.0	.0	.0	1.0	11.0	21.0	24.0	21.0		
26	6.0	.0	.0	.0	.0	2.0	15.0	22.0	23.0	19.0		
27	6.0	.5	.0	.0	.0	1.0	13.0	20.0	23.0	---		
28	5.5	.0	.0	.0	.0	2.0	14.0	21.0	20.0	---		
29	6.0	.0	.0	.0	.0	1.0	15.0	21.0	18.0	---		
30	7.0	.0	.0	.0	---	2.0	10.0	18.0	20.0	---		
31	5.0	---	.0	.0	---	1.0	---	17.0	---	---		
MEAN	8.5	.5	.5	.0	.0	.5	7.5	16.0	20.0	22.0		

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

06471200 MAPLE RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 45°56'20", long 98°27'08", in SW¼SE¼ sec.33, T.129 N., R.62 W., Dickey County, ND, Hydrologic Unit 10160004, on left bank 0.4 mi (0.6 km) upstream from State line, 7.8 mi (12.6 km) northeast of Frederick, SD, and 15.7 mi (25.3 km) upstream from mouth.

DRAINAGE AREA.--750 mi^2 (1,940 km^2), approximately, of which about 270 mi^2 (699 km^2) is probably noncontributing.

PERIOD OF RECORD.--June 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,365 ft (416 m), from topographic map. Prior to June 14, 1962, nonrecording gage at site 0.4 mi (0.6 km) downstream at datum 0.94 ft (0.287 m) lower.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--24 years, 20.0 ft^3/s (0.566 m^3/s), 14,490 acre-ft/yr (17.9 hm^3/yr); median of yearly mean discharges, 10 ft^3/s (0.28 m^3/s), 7,240 acre-ft/yr (8.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,930 ft^3/s (168 m^3/s) Apr. 11, 1969; maximum gage height, 16.05 ft (4.892 m) Apr. 11, 1969 (backwater from ice); no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31 ft^3/s (0.88 m^3/s) Apr. 1, gage height, 4.27 ft (1.301 m); no peak above base of 50 ft^3/s (1.416 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	30	2.6	2.2	.67	.00	.00
2	.00	.00	.00	.00	.00	.00	28	2.2	20	.25	.00	.00
3	.00	.00	.00	.00	.00	.00	26	2.2	18	.16	.00	.00
4	.00	.00	.00	.00	.00	.00	24	2.0	14	.22	.00	.00
5	.00	.00	.00	.00	.00	.00	21	1.8	11	.22	.00	.00
6	.00	.00	.00	.00	.00	.00	20	1.4	8.5	.07	.00	.00
7	.00	.00	.00	.00	.00	.00	18	1.4	7.0	.07	.00	.00
8	.00	.00	.00	.00	.00	.00	18	1.2	5.1	.02	.00	.00
9	.00	.00	.00	.00	.00	.00	15	.99	3.9	.01	.00	.00
10	.00	.00	.00	.00	.00	.00	15	.99	2.6	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	14	.47	1.8	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	13	.37	1.6	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	11	.29	1.7	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	10	.19	1.3	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	9.6	.13	1.1	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	8.2	.11	.67	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	7.5	.07	.47	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	6.1	.06	.47	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	6.4	.02	.29	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	5.9	.00	.25	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	4.8	.00	.47	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	6.7	.00	.82	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	6.1	.00	1.0	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	5.9	.00	1.7	.00	.00	.00
25	.00	.00	.00	.00	.00	.06	5.3	.00	2.6	.00	.00	.00
26	.00	.00	.00	.00	.00	.40	3.9	.00	2.7	.00	.00	.00
27	.00	.00	.00	.00	.00	5.0	3.5	.00	2.2	.00	.00	.00
28	.00	.00	.00	.00	.00	23	3.1	.00	1.7	.00	.00	.00
29	.00	.00	.00	.00	.00	26	2.6	.00	1.3	.00	.00	.00
30	.00	.00	.00	.00	---	29	2.6	.00	.74	.00	.00	.00
31	.00	---	.00	.00	---	30	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	113.46	351.2	18.49	117.18	1.69	.00	.00
MEAN	.000	.000	.000	.000	.000	3.66	11.7	.60	3.91	.055	.000	.000
MAX	.00	.00	.00	.00	.00	30	30	2.6	20	.67	.00	.00
MIN	.00	.00	.00	.00	.00	.00	2.6	.00	.25	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	225	697	37	232	3.4	.00	.00

CAL YR 1979 TOTAL 17280.61 MEAN 47.3 MAX 2280 MIN .00 AC-FT 34280
WTR YR 1980 TOTAL 602.02 MEAN 1.64 MAX 30 MIN .00 AC-FT 1190

06471500 ELM RIVER AT WESTPORT, SD

LOCATION.--Lat 45°39'22", long 98°29'48", in SW¼NW¼ sec.12, T.125 N., R.64 W., Brown County, Hydrologic Unit 10160004, on right bank 12 ft (3.7 m) downstream from highway bridge, 0.5 mi (0.8 km) north of Westport, 0.7 mi (1.1 km) upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, 9.3 mi (15.0 km) downstream from Willow Creek, and 30.4 mi (48.9 km) upstream from mouth.

DRAINAGE AREA.--1,680 mi² (4,350 km²), approximately, of which about 510 mi² (1,320 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,309.3 ft (399.07 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 6, 1951, and Apr. 8 to Sept. 9, 1952, nonrecording gage 12 ft (3.7 m) upstream at same datum. Aug. 6, 1951, to Apr. 7, 1952, water-stage recorder at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated for Aberdeen municipal water supply by Elm Lake and other small reservoirs upstream, combined capacity, about 16,000 acre-ft (19.7 hm³). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--35 years, 46.9 ft³/s (1.328 m³/s), 33,980 acre-ft/yr (41.9 hm³/yr); median of yearly mean discharges, 23 ft³/s (0.65 m³/s), 16,700 acre-ft/yr (21 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft³/s (357 m³/s) Apr. 10, 1969, gage height, 22.11 ft (6.739 m); no flow for many days in most years prior to 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 35 ft³/s (0.99 m³/s) Mar. 30, gage height, unknown, no peak above base of 100 ft³/s (2.83 m³/s); minimum daily discharge, 0.82 ft³/s (0.023 m³/s) June 30 and Sept. 30.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 8 to Aug. 14; stage-discharge relation affected by ice Jan. 21 to Feb. 6)

4.1	0.70	4.4	5.8	4.6	16
4.2	1.6	4.5	9.7	4.9	40
4.3	3.2				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	8.8	5.0	4.7	3.0	4.9	33	8.1	4.7	.83	7.3	3.4
2	9.8	2.3	4.8	4.8	3.3	4.7	28	7.9	4.5	.84	7.3	3.2
3	10	2.5	4.6	4.6	3.8	4.5	16	7.8	4.4	.92	7.3	3.4
4	11	3.2	4.6	4.5	4.2	4.3	15	7.6	4.3	1.3	7.3	3.1
5	10	3.2	5.2	4.6	4.4	4.1	13	7.5	4.2	3.2	6.9	3.0
6	11	3.2	4.6	4.9	4.5	3.9	12	7.5	4.1	6.7	6.9	3.1
7	10	3.4	4.6	5.8	4.6	3.8	15	7.4	4.0	8.6	6.9	2.8
8	11	3.2	4.9	3.8	4.5	3.7	17	7.4	3.9	9.6	6.5	2.7
9	12	3.2	4.6	3.8	4.5	3.6	18	7.4	3.8	11	6.2	2.5
10	11	3.0	4.7	4.2	4.4	3.6	18	7.4	3.7	12	6.2	2.5
11	12	3.0	4.2	5.1	4.3	3.6	17	7.3	3.6	13	6.0	2.3
12	12	2.8	4.9	6.3	4.1	3.5	16	7.2	3.5	13	5.9	2.2
13	11	2.8	4.6	7.1	4.0	3.5	15	7.1	3.4	13	5.6	2.3
14	11	2.8	4.6	7.7	3.9	3.5	16	6.9	3.4	13	4.6	2.2
15	11	2.8	4.9	8.3	3.8	3.5	17	6.7	3.3	13	4.3	2.0
16	11	4.3	4.6	7.9	3.6	3.8	19	6.5	3.2	14	3.8	2.1
17	11	4.3	4.6	4.0	3.5	4.4	26	6.4	3.2	15	3.8	2.0
18	9.2	4.9	5.2	3.6	3.6	5.0	28	6.2	3.2	16	3.8	2.0
19	5.7	5.5	5.4	3.2	3.8	6.4	26	6.1	3.0	14	3.6	1.6
20	5.5	5.5	5.7	3.0	4.3	9.0	20	5.9	3.0	13	3.5	1.6
21	5.4	5.6	5.8	2.9	4.7	13	16	5.8	2.8	13	4.1	1.6
22	5.6	5.5	5.7	2.8	5.0	19	13	5.7	2.7	11	3.9	1.4
23	5.1	5.5	5.7	2.8	5.2	23	12	5.6	2.8	9.5	4.1	1.5
24	5.3	6.0	5.4	2.7	5.2	26	11	5.6	4.1	9.1	3.7	2.9
25	5.6	6.2	5.2	2.7	5.1	29	9.8	5.6	3.2	8.6	3.7	2.6
26	5.3	6.2	5.0	2.6	5.1	30	9.2	5.5	2.8	8.4	3.5	1.7
27	5.3	6.1	4.9	2.6	5.0	32	8.8	5.4	2.6	8.0	3.4	1.2
28	3.8	5.7	4.9	2.6	5.0	33	8.6	5.2	1.8	7.9	3.7	1.0
29	3.4	4.3	4.7	2.6	5.0	33	8.4	5.1	.88	7.6	3.4	.98
30	3.9	4.8	4.6	2.7	---	34	8.2	5.0	.82	7.2	3.4	.82
31	10	---	4.5	2.8	---	34	---	4.8	---	7.3	3.4	---
TOTAL	263.8	130.6	152.7	131.7	125.4	393.3	490.0	201.6	98.90	289.59	154.0	65.70
MEAN	8.51	4.35	4.93	4.25	4.32	12.7	16.3	6.50	3.30	9.34	4.97	2.19
MAX	12	8.8	5.8	8.3	5.2	34	33	8.1	4.7	16	7.3	3.4
MIN	3.4	2.3	4.2	2.6	3.0	3.5	8.2	4.8	.82	.83	3.4	.82
AC-FT	523	259	303	261	249	780	972	400	196	574	305	130

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CAL YR 1979   TOTAL   26415.00   MEAN 72.4   MAX  3250   MIN 1.3    AC-FT  52390
WTR YR 1980   TOTAL    2497.29   MEAN  6.82  MAX    34   MIN  .82   AC-FT   4950
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06471898 MOCCASIN CREEK NEAR WARNER, SD

LOCATION.--Lat 45°17'55", long 98°29'42", in NW¼NW¼NW¼ sec.13, T.121 N., R.64 W., Brown County, Hydrologic Unit 10160003, on right bank at downstream side of highway bridge, 40 ft (12 m) upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, 21.5 mi (34.6 km) upstream from mouth, 2.0 mi (3.2 km) south of Warner and 11.3 mi (18.2 km) south of Aberdeen.

DRAINAGE AREA.--256 mi² (663 km²).

PERIOD OF RECORD.--October 1976 to September 1980 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,274.35 ft (388.422 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 387 ft³/s (11.0 m³/s) Apr. 1, gage height, 7.66 ft (2.335 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 30 ft³/s (0.850 m³/s) May 26, gage height, 4.80 ft (1.463 m); no flow Jan. 30 to Mar. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	2.4	3.9	.84	.00	.00	10	4.2	11	1.2	.08	5.2
2	2.2	3.0	3.8	.79	.00	.00	11	4.1	9.8	1.1	.08	4.5
3	2.1	3.5	3.7	.72	.00	.00	12	4.0	8.8	1.0	.08	4.4
4	2.1	4.5	3.6	.64	.00	.00	13	4.3	8.2	1.6	.08	4.2
5	2.1	7.0	3.3	.52	.00	.14	14	4.3	8.1	1.4	.07	3.5
6	2.1	9.2	3.1	.44	.00	.45	15	4.0	7.7	1.3	.07	2.9
7	2.1	9.7	3.0	.37	.00	.85	16	3.7	7.6	1.2	.07	2.7
8	2.1	8.8	2.8	.30	.00	1.1	19	3.4	7.2	1.0	.07	2.6
9	2.0	7.0	2.6	.22	.00	1.3	19	3.1	6.9	.70	.06	2.3
10	2.0	6.4	2.5	.19	.00	1.5	16	3.2	6.2	.50	.06	2.0
11	2.0	6.1	2.3	.17	.00	1.6	17	3.0	5.2	.39	.06	1.6
12	2.0	4.9	2.2	.17	.00	1.8	17	2.7	4.6	.30	.06	1.5
13	2.0	4.8	1.9	.17	.00	2.1	16	2.6	4.8	.24	.06	1.3
14	2.0	4.6	1.6	.16	.00	2.3	14	2.5	4.6	.21	.06	1.3
15	2.0	4.5	1.4	.16	.00	2.5	12	2.4	4.0	.19	.07	1.1
16	2.0	4.3	1.2	.16	.00	2.6	10	2.3	3.6	.17	.08	1.0
17	1.9	4.4	1.1	.15	.00	2.9	8.5	2.2	3.0	.15	.10	.96
18	1.9	4.5	1.1	.15	.00	3.2	6.7	2.2	2.8	.14	.20	1.1
19	2.0	4.7	1.1	.15	.00	3.1	5.6	2.0	2.8	.12	1.0	1.0
20	2.1	4.9	1.1	.14	.00	3.1	4.7	1.9	2.7	.11	2.2	.96
21	2.2	5.1	1.0	.14	.00	3.0	3.8	1.7	2.7	.10	3.6	.94
22	2.1	5.4	1.0	.12	.00	2.9	3.7	1.4	2.7	.10	4.5	1.1
23	2.0	5.6	.98	.11	.00	2.6	3.1	1.0	2.7	.09	4.9	.96
24	1.9	5.6	.98	.10	.00	2.4	2.7	.87	2.5	.09	6.1	.99
25	1.9	5.6	.97	.08	.00	2.5	2.9	1.1	2.5	.09	7.8	1.2
26	1.9	5.5	.96	.06	.00	2.7	3.4	25	2.4	.08	8.8	1.1
27	1.9	5.2	.95	.04	.00	3.2	3.0	24	2.3	.08	8.8	1.1
28	1.9	4.6	.94	.02	.00	4.3	4.2	17	2.2	.08	8.2	1.0
29	1.9	4.2	.92	.01	.00	5.5	4.2	14	1.6	.08	7.8	1.1
30	1.9	4.0	.88	.00	---	7.3	4.2	14	1.2	.08	6.9	1.1
31	2.0	---	.85	.00	---	9.0	---	11	---	.08	5.7	---
TOTAL	62.5	160.0	57.73	7.29	.00	75.94	294.5	173.17	142.4	13.97	77.71	56.71
MEAN	2.02	5.33	1.86	.24	.000	2.45	9.82	5.59	4.75	.45	2.51	1.89
MAX	2.2	9.7	3.9	.84	.00	9.0	19	25	11	1.6	8.8	5.2
MIN	1.9	2.4	.85	.00	.00	.00	2.7	.87	1.2	.08	.06	.94
AC-FT	124	317	115	14	.00	151	584	343	282	28	154	112

CAL YR 1979 TOTAL 2353.43 MEAN 6.45 MAX 86 MIN .00 AC-FT 4670
WTR YR 1980 TOTAL 1121.92 MEAN 3.07 MAX 25 MIN .00 AC-FT 2230

06473000 JAMES RIVER AT ASHTON, SD

LOCATION.--Lat 44°59'54", long 98°28'50", in NW¼NW¼NE¼ sec.36, T.118 N., R.64 W., Spink County, Hydrologic Unit 10160006, on right bank at downstream side of highway bridge, 0.9 mi (1.4 km) east of Ashton, 6.1 mi (9.8 km) upstream from Snake Creek, and 14.2 mi (22.8 km) upstream from Turtle Creek.

DRAINAGE AREA.--11,000 mi² (28,500 km²), approximately, of which about 4,190 mi² (10,900 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year.

REVISED RECORDS.--WSP 1209: 1947.

GAGE.--Water-stage recorder. Datum of gage is 1,244.4 ft (379.29 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 26, 1957, nonrecording gage at present site and Nov. 26, 1957, to Oct. 7, 1974, water-stage recorder at site 900 ft (274 m) upstream all at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm³), 285 mi (459 km) upstream since May 1953. Occasional backwater and reverse flow caused by Snake Creek during most years. Several observations of specific conductance were made during the year.

AVERAGE DISCHARGE.--35 years, 160 ft³/s (4.531 m³/s), 115,900 acre-ft/yr (143 hm³/yr); median of yearly mean discharges, 110 ft³/s (3.12 m³/s), 79,700 acre-ft/yr (98 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,680 ft³/s (161 m³/s) Apr. 24, 1969, gage height, 20.63 ft (6.288 m); maximum gage height, 21.17 ft (6.453 m) Apr. 13, 1969 (backwater from Snake Creek); maximum daily reverse flow, 2,100 ft³/s (59.5 m³/s) Apr. 9, 1969 (backwater from Snake Creek).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 295 ft³/s (8.35 m³/s) Nov. 13; maximum gage height, 6.51 ft (1.984 m) Nov. 29 (backwater from ice); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	137	204	255	80	8.2	3.3	100	97	23	19	.20	.45
2	139	206	257	72	8.0	3.3	120	82	18	15	.00	.36
3	140	209	257	62	7.8	3.3	130	73	15	13	.00	.00
4	142	213	258	55	7.8	3.4	140	68	15	19	.00	.00
5	140	216	260	50	7.7	3.4	140	64	16	16	.00	.00
6	141	221	260	45	7.7	3.5	140	60	18	13	.00	.00
7	143	225	255	41	7.6	3.5	150	56	27	13	.00	.00
8	143	232	250	37	7.5	3.6	160	53	33	9.1	.00	.00
9	144	238	243	35	7.3	3.7	165	51	39	7.8	.00	.00
10	146	241	235	33	7.0	4.0	169	50	41	6.4	.00	.00
11	147	245	225	32	6.8	4.3	173	47	43	6.0	.00	.00
12	148	248	220	30	6.6	4.6	181	46	41	4.0	.07	.00
13	148	269	210	28	6.3	5.0	187	45	42	3.5	2.5	.00
14	147	265	202	27	6.0	6.2	189	44	42	3.1	6.3	.00
15	148	262	195	25	5.8	9.0	190	43	40	2.9	7.4	.00
16	149	266	187	24	5.6	18	193	41	37	4.6	10	.00
17	150	270	181	22	5.4	27	199	40	34	3.7	7.5	.00
18	151	275	175	21	5.2	33	208	38	30	2.6	5.8	.00
19	152	277	170	19	5.0	36	216	37	27	2.3	9.8	.00
20	152	279	163	17	4.8	35	225	35	25	1.5	13	.00
21	152	279	155	15	4.6	32	235	32	23	1.0	9.3	.00
22	153	279	148	14	4.5	30	239	28	21	.68	5.8	.00
23	156	277	143	13	4.3	31	242	26	22	.36	4.9	.00
24	159	275	135	12	4.1	32	243	23	26	.08	3.5	.00
25	163	273	130	11	3.8	34	239	20	28	.00	2.7	.00
26	169	270	125	10	3.6	34	227	18	29	.00	2.0	.00
27	172	265	115	9.5	3.5	35	205	16	26	.00	1.4	.00
28	175	260	110	9.2	3.4	37	175	13	23	.00	1.1	.00
29	179	255	100	9.0	3.4	43	141	13	25	.50	1.0	.00
30	183	255	95	8.7	---	55	115	16	21	1.4	.75	.00
31	194	---	88	8.5	---	80	---	16	---	.47	.55	---
TOTAL	4762	7549	5802	874.9	169.3	656.1	5436	1291	850	169.99	95.57	.81
MEAN	154	252	187	28.2	5.84	21.2	181	41.6	28.3	5.48	3.08	.027
MAX	194	279	260	80	8.2	80	243	97	43	19	13	.45
MIN	137	204	88	8.5	3.4	3.3	100	13	15	.00	.00	.00
AC-FT	9450	14970	11510	1740	336	1300	10780	2560	1690	337	190	1.6

CAL YR 1979 TOTAL 159573.69 MEAN 437 MAX 2040 MIN .70 AC-FT 316500
WTR YR 1980 TOTAL 27656.67 MEAN 75.6 MAX 279 MIN .00 AC-FT 54860

06473000 JAMES RIVER AT ASHTON, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1977 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum daily, 28.0°C July 3, 1978; minimum daily, 0.0°C on several days during November to December 1978.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	3.0					---	19.0	---	24.0	24.0	---
2	15.0	3.0					---	19.0	21.0	25.0	---	19.0
3	14.0	2.0					---	20.0	22.0	24.0	---	---
4	12.0	---					---	---	20.0	---	---	---
5	13.0	2.0					---	20.0	21.0	26.0	---	---
6	13.0	2.0					---	18.0	22.0	---	---	---
7	---	1.0					---	16.0	23.0	28.0	---	---
8	---	1.0					---	14.0	---	25.0	---	---
9	12.0	.0					---	15.0	21.0	26.0	---	---
10	11.0	---					---	14.0	23.0	28.0	---	---
11	10.0	---					---	---	23.0	29.0	---	---
12	10.0	---					---	15.0	25.0	27.0	---	---
13	8.0	1.0					---	15.0	25.0	---	24.0	---
14	---	1.0					8.0	14.0	26.0	29.0	23.0	---
15	9.0	2.0					9.0	16.0	---	27.0	24.0	---
16	10.0	3.0					9.0	16.0	25.0	27.0	20.0	---
17	9.0	2.0					11.0	16.0	24.0	25.0	---	---
18	9.0	---					12.0	---	25.0	26.0	23.0	---
19	9.0	3.0					14.0	18.0	23.0	24.0	24.0	14.0
20	9.0	1.0					---	19.0	22.0	---	24.0	14.0
21	---	1.0					17.0	20.0	24.0	22.0	24.0	---
22	6.0	---					18.0	21.0	---	25.0	22.0	14.0
23	5.0	1.0					17.0	22.0	25.0	25.0	24.0	12.0
24	7.0	.0					16.0	22.0	24.0	26.0	---	15.0
25	7.0	---					16.0	---	26.0	---	26.0	12.0
26	7.0	.0					16.0	---	25.0	---	20.0	13.0
27	8.0	.0					---	23.0	25.0	---	20.0	14.0
28	---	.0					17.0	23.0	---	---	21.0	---
29	8.0	.0					17.0	23.0	---	---	23.0	18.0
30	7.0	.0					18.0	20.0	23.0	26.0	19.0	18.0
31	5.0	---					---	20.0	---	23.0	---	---
MEAN	9.5	1.5					14.5	18.5	23.5	26.0	22.5	15.0

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

06473750 WOLF CREEK NEAR REE HEIGHTS, SD

LOCATION.--Lat 44°36'25", long 99°13'54", in SW¼SW¼ sec.11, T.113 N., R.70 W., Hand County, Hydrologic Unit 10160009, near right bank on downstream side of highway bridge, 0.3 mi (0.5 km) downstream from small left-bank tributary, 6.5 mi (10.5 km) north of Ree Heights, and 13.8 mi (22.2 km) upstream from Lake Louise dam.

DRAINAGE AREA.--265 mi^2 (686 km^2), approximately.

PERIOD OF RECORD.--September 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,614.16 ft (491.996 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by small reservoir 0.5 mi (0.8 km) upstream, capacity, about 1,100 acre-ft (1.36 hm^3).

AVERAGE DISCHARGE.--21 years, 3.91 ft^3/s (0.111 m^3/s), 2,830 acre-ft/yr (3.49 hm^3/yr); median of yearly mean discharges, 0.11 ft^3/s (0.003 m^3/s), 80 acre-ft/yr (0.10 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 990 ft^3/s (28.0 m^3/s) Apr. 5, 1969, gage height, 9.33 ft (2.844 m); maximum gage height, 9.57 ft (2.917 m) Mar. 14, 1966 (backwater from ice); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--No flow during year. No peak above base of 40 ft^3/s (1.13 m^3/s).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

No flow during year

06474000 TURTLE CREEK NEAR TULARE, SD

LOCATION.--Lat 44°44'06", long 98°35'09", in SE¼SE¼ sec.25, T.115 N., R.65 W., Spink County, Hydrologic Unit 10160009, on left bank at downstream side of highway bridge, 3.9 mi (6.3 km) west of Tulare and 8.9 mi (14.3 km) downstream from Wolf Creek.

DRAINAGE AREA.--1,120 mi² (2,900 km²), approximately.

PERIOD OF RECORD.--August 1953 to September 1956, September 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,300 ft (396 m), by barometer. Prior to Oct. 6, 1965, nonrecording gage at same site and datum.

REMARKS.--Records fair except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--18 years, 13.8 ft³/s (0.391 m³/s), 10,000 acre-ft/yr (12.3 hm³/yr); median of yearly mean discharges, 1.6 ft³/s (0.04 m³/s) 1,200 acre-ft/yr (1.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 6,000 ft³/s (170 m³/s) Apr. 5, 1969; maximum gage height, 18.51 ft (5.642 m) Apr. 5, 1969 (backwater from ice); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.57 ft³/s (0.016 m³/s) Apr. 9, gage height, 4.05 ft (1.234 m); maximum gage height, 4.09 ft (1.247 m) Apr. 9; no peak above base of 50 ft³/s (1.42 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.03	.25	.31	.25	.27	.49	.08	.00	.00	.00	.00
2	.00	.03	.25	.30	.26	.27	.48	.07	.00	.00	.00	.00
3	.00	.04	.26	.29	.27	.26	.51	.05	.00	.00	.00	.00
4	.00	.06	.26	.28	.29	.26	.49	.04	.00	.00	.00	.00
5	.00	.09	.27	.27	.33	.25	.44	.04	.00	.00	.00	.00
6	.00	.10	.26	.26	.37	.25	.42	.03	.00	.00	.00	.00
7	.00	.11	.26	.26	.38	.25	.44	.02	.00	.00	.00	.00
8	.00	.11	.25	.25	.38	.26	.53	.02	.00	.00	.00	.00
9	.00	.13	.25	.24	.39	.26	.53	.01	.00	.00	.00	.00
10	.00	.14	.21	.23	.37	.27	.44	.01	.00	.00	.00	.00
11	.00	.16	.20	.22	.34	.29	.44	.01	.00	.00	.00	.00
12	.00	.17	.18	.21	.32	.31	.43	.00	.00	.00	.00	.00
13	.00	.18	.17	.22	.29	.33	.38	.00	.00	.00	.00	.00
14	.00	.20	.16	.25	.28	.36	.35	.00	.00	.00	.00	.00
15	.00	.21	.15	.27	.26	.38	.34	.00	.00	.00	.00	.00
16	.00	.22	.14	.29	.25	.40	.32	.00	.00	.00	.00	.00
17	.00	.23	.13	.30	.25	.41	.30	.00	.00	.00	.00	.00
18	.00	.24	.13	.31	.25	.42	.28	.00	.00	.00	.00	.00
19	.00	.26	.14	.32	.26	.43	.26	.00	.00	.00	.00	.00
20	.00	.24	.15	.34	.26	.43	.24	.00	.00	.00	.00	.00
21	.00	.23	.17	.35	.27	.42	.22	.00	.00	.00	.00	.00
22	.00	.27	.18	.37	.29	.41	.21	.00	.00	.00	.00	.00
23	.00	.26	.18	.39	.30	.41	.19	.00	.00	.00	.00	.00
24	.00	.26	.19	.38	.29	.41	.17	.00	.00	.00	.00	.00
25	.00	.26	.21	.34	.28	.42	.16	.00	.00	.00	.00	.00
26	.01	.25	.23	.30	.28	.43	.14	.00	.00	.00	.00	.00
27	.01	.24	.25	.28	.28	.45	.12	.00	.00	.00	.00	.00
28	.02	.24	.28	.27	.27	.48	.11	.00	.00	.00	.00	.00
29	.02	.24	.29	.26	.27	.51	.10	.00	.00	.00	.00	.00
30	.02	.24	.30	.25	---	.54	.08	.00	.00	.00	.00	.00
31	.03	---	.31	.25	---	.55	---	.00	---	.00	.00	---
TOTAL	.11	5.44	6.64	8.86	8.58	11.39	9.61	.38	.00	.00	.00	.00
MEAN	.004	.18	.21	.29	.30	.37	.32	.012	.000	.000	.000	.000
MAX	.03	.27	.31	.39	.39	.55	.53	.08	.00	.00	.00	.00
MIN	.00	.03	.13	.21	.25	.25	.08	.00	.00	.00	.00	.00
AC-FT	.2	11	13	18	17	23	19	.8	.00	.00	.00	.00

CAL YR 1979 TOTAL 756.96 MEAN 2.07 MAX 77 MIN .00 AC-FT 1500
WTR YR 1980 TOTAL 51.01 MEAN .14 MAX .55 MIN .00 AC-FT 101

06474300 MEDICINE CREEK NEAR ZELL, SD

LOCATION.--Lat 44°45'52", long 98°42'13", in NW¼NW¼ sec.19, T.115 N., R.65 W., Spink County, Hyrologic Unit 10160009, on downstream side at center of bridge on State Highway 26, 3.8 mi (6.1 km) upstream from Cottonwood Lake and 9.2 mi (14.8 km) south of Zell.

DRAINAGE AREA.--210 mi^2 (540 km^2), approximately.

PERIOD OF RECORD.--September 1959 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,320 ft (402 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--21 years, 5.99 ft^3/s (0.170 m^3/s), 4,340 acre-ft/yr (5.35 hm^3/yr); median of yearly mean discharges, 2.0 ft^3/s (0.06 m^3/s), 1,400 acre-ft/yr (1.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,210 ft^3/s (62.6 m^3/s) Apr. 5, 1969, gage height, 12.41 ft (3.783 m); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4.0 ft^3/s (0.11 m^3/s) Apr. 18; maximum gage height, 3.90 ft (1.189 m) Mar. 15 (backwater from ice), no peak above base of 40 ft^3/s (1.13 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	.80	.22	.10	.00	.00	.54	.70	.38	.04	.00	.00
2	.18	.75	.22	.10	.00	.00	.50	.58	.28	.04	.00	.00
3	.16	1.1	.22	.10	.00	.00	.54	.54	.46	.04	.00	.00
4	.16	1.3	.20	.12	.00	.00	.50	.42	.34	.05	.00	.00
5	.12	1.1	.24	.12	.00	.00	.50	.38	.50	.04	.00	.00
6	.10	.95	.22	.12	.00	.00	.54	.28	.34	.03	.00	.00
7	.09	.85	.24	.08	.00	.00	.70	.24	.34	.02	.00	.00
8	.10	.80	.18	.05	.00	.00	1.2	.22	.20	.02	.00	.00
9	.12	.70	.20	.03	.00	.01	2.2	.22	.09	.02	.00	.00
10	.12	.70	.20	.03	.00	.01	3.1	.24	.08	.02	.00	.00
11	.16	.62	.14	.02	.00	.01	3.4	.22	.06	.01	.00	.00
12	.10	.54	.12	.02	.00	.01	3.3	.22	.06	.01	.00	.00
13	.10	.66	.12	.02	.00	.02	3.3	.22	.07	.02	.00	.00
14	.12	.85	.10	.04	.00	.04	3.1	.18	.06	.02	.00	.00
15	.14	.90	.20	.06	.00	.08	2.6	.16	.06	.01	.00	.00
16	.18	.90	.14	.05	.00	.10	2.7	.12	.06	.01	.03	.00
17	.16	.95	.10	.07	.00	.10	3.4	.10	.06	.01	.02	.00
18	.14	.90	.12	.07	.00	.15	3.7	.10	.06	.01	.00	.00
19	.16	.90	.12	.07	.00	.90	3.1	.09	.06	.02	.00	.00
20	.18	.75	.14	.07	.00	1.4	2.5	.09	.08	.02	.02	.00
21	.16	.75	.14	.07	.00	.36	2.2	.08	.08	.01	.01	.00
22	.16	.90	.14	.09	.00	.26	1.9	.09	.09	.01	.00	.00
23	.14	.54	.16	.10	.00	.24	1.4	.09	.08	.01	.00	.00
24	.14	.50	.16	.12	.00	1.4	1.3	.09	.06	.01	.00	.00
25	.14	.50	.16	.06	.00	.66	1.2	.12	.06	.00	.00	.00
26	.14	.50	.12	.03	.00	.42	1.0	.14	.08	.00	.00	.00
27	.12	.42	.12	.01	.00	.54	1.0	.18	.06	.00	.00	.00
28	.10	.30	.10	.00	.00	.85	.90	.18	.04	.00	.00	.00
29	.12	.22	.10	.00	.00	1.0	.80	.18	.05	.00	.00	.00
30	.16	.18	.14	.00	---	1.2	.70	.20	.05	.00	.00	.00
31	.80	---	.12	.00	---	.80	---	.14	---	.00	.00	---
TOTAL	4.99	21.83	4.90	1.82	.00	10.56	53.82	6.81	4.29	.50	.08	.00
MEAN	.16	.73	.16	.059	.000	.34	1.79	.22	.14	.016	.003	.000
MAX	.80	1.3	.24	.12	.00	1.4	3.7	.70	.50	.05	.03	.00
MIN	.09	.18	.10	.00	.00	.00	.50	.08	.04	.00	.00	.00
AC-FT	9.9	43	9.7	3.6	.00	21	107	14	8.5	1.0	.2	.00

CAL YR 1979 TOTAL 1535.09 MEAN 4.21 MAX 90 MIN .00 AC-FT 3040
WTR YR 1980 TOTAL 109.60 MEAN .30 MAX 3.7 MIN .00 AC-FT 217

06475000 JAMES RIVER NEAR REDFIELD, SD

LOCATION.--Lat 44°55'13", long 98°25'52" in SW¼NW¼ sec.28, T.117 N., R.63 W., Spink County, Hydrologic Unit 10160006, on right bank at downstream side of highway bridge, 5.2 mi (8.4 km) northeast of Redfield and 5.2 mi (8.4 km) downstream from Turtle Creek.

DRAINAGE AREA.--14,800 mi² (38,300 km²), approximately, of which about 4,600 mi² (11,900 km²) is probably noncontributing.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1977 to current year.

REMARKS.--Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph since Oct. 1, 1977.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				---	---	.0	.0	23.0	---	24.0	24.5	26.5
2				---	---	.0	.0	24.5	---	23.0	25.5	26.0
3				---	---	.0	.0	26.0	---	23.0	26.5	28.5
4				---	---	.0	.0	26.5	---	24.0	24.5	26.0
5				---	---	.0	---	28.0	---	25.5	23.0	28.0
6				---	---	.0	---	26.5	---	27.0	26.0	31.5
7				---	---	.0	---	22.0	---	29.5	31.5	34.5
8				---	.0	.0	---	18.5	---	26.0	29.5	35.0
9				---	.0	.0	---	16.0	---	23.5	28.0	25.5
10				.0	.0	.0	---	18.5	---	29.0	28.0	24.0
11				.0	.0	.0	---	18.0	---	30.0	28.0	26.0
12				---	.0	.0	---	18.5	---	28.0	26.5	26.5
13				---	.0	.0	---	17.0	---	26.5	27.0	24.5
14				---	.0	.0	---	16.5	---	28.5	28.0	23.0
15				---	.0	.0	---	17.0	---	28.0	26.5	23.5
16				---	.0	.0	---	18.5	---	24.5	25.0	18.5
17				---	.0	.0	---	18.5	---	24.0	23.5	17.0
18				---	.0	.0	9.5	18.5	---	23.0	28.0	16.5
19				---	.0	.0	11.0	20.5	25.5	22.0	29.5	18.0
20				---	.0	.0	14.5	24.5	25.0	20.5	31.0	18.0
21				---	.0	.0	16.0	26.5	25.0	19.5	28.5	17.0
22				---	.0	.0	20.0	28.5	26.0	21.5	29.0	13.5
23				---	.0	.0	19.5	29.0	28.0	23.0	30.5	12.0
24				---	.0	.0	19.5	30.0	28.5	22.0	35.5	12.0
25				---	.0	.0	19.5	31.0	27.0	23.0	35.5	10.0
26				---	.0	.0	19.5	32.0	30.0	23.0	30.0	9.5
27				---	.0	.0	19.5	33.0	27.0	24.5	24.5	10.5
28				---	.0	.0	20.0	33.5	25.0	26.0	26.5	16.0
29				---	.0	.0	20.5	33.5	22.0	26.5	30.5	19.5
30				---	---	.0	21.0	31.0	23.0	26.0	30.0	16.5
31				---	---	.0	---	29.5	---	24.0	26.0	---
MEAN				.0	.0	.0	13.5	24.5	26.0	25.0	28.0	21.0

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

06476000 JAMES RIVER AT HURON, SD

LOCATION.--Lat 44°21'49", long 98°11'56", in SW¼SE¼NE¼ sec.6, T.110 N., R.61 W., Beadle County, Hydrologic Unit 10160006, on right bank 15 ft (5 m) upstream from city dam at Huron, 135 ft (41 m) downstream from Chicago and North Western Transportation Co. bridge and 165 ft (50 m) upstream from bridge on business loop U.S. Highway 14.

DRAINAGE AREA.--16,800 mi² (43,500 km), approximately, of which about 4,790 mi² (12,400 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to September 1932, August 1943 to current year. Monthly discharge only for some periods, published in WSP 1309. Gage-height records collected at site about 100 ft (30 m) downstream for period of open water each year July 1902 to June 1914 and for period March to June 1915-23 are in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 1,223.44 ft (372.905 m) National Geodetic Vertical Datum of 1929. Aug. 29, 1928, to Mar. 15, 1929, nonrecording gage at site 100 ft (30 m) downstream at about same datum. Mar. 16, 1929, to June 30, 1932, nonrecording gage 165 ft (50 m) downstream at present datum. Aug. 3, 1943, to Oct. 17, 1951, nonrecording gage at site 15 ft (5 m) downstream at present datum.

REMARKS.--Records good above 100 ft³/s (2.832 m³/s) and fair below. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity 229,470 acre-ft (283 hm³), 365 mi (587 km) upstream since May 1953. Satellite telemeter at station.

AVERAGE DISCHARGE.--41 years, 235 ft³/s (6.655 m³/s), 170,300 acre-ft/yr (210 hm³/yr); median of yearly mean discharges, 130 ft³/s (3.68 m³/s), 94,200 acre-ft/yr (120 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,000 ft³/s (255 m³/s) Apr. 13, 1969, gage height, 16.70 ft (5.090 m); no flow for long periods in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood between Apr. 11 and 13, 1881, reached a stage of 19.8 ft (6.04 m), from U.S. Weather Bureau publication. Flood of Mar. 22, 1922, reached a stage of 16.5 ft (5.03 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 548 ft³/s (15.5 m³/s) June 4, gage height, 9.38 ft (2.859 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86	235	252	147	27	13	56	236	41	37	.04	.06
2	86	200	252	139	26	12	58	207	33	28	.01	.00
3	86	183	248	133	25	11	62	177	32	28	.00	.00
4	86	201	245	126	24	6.1	65	150	58	44	.00	.00
5	86	217	238	119	24	2.4	69	138	67	39	.00	.00
6	86	197	242	110	23	163	81	122	94	36	.00	.00
7	86	212	246	104	22	236	96	101	100	38	.00	.00
8	86	204	244	98	22	156	147	91	95	24	.00	.00
9	86	240	245	90	22	121	196	73	101	26	.00	.00
10	86	227	242	84	21	108	220	99	96	23	.00	.00
11	110	231	235	77	21	104	260	73	86	19	.00	.00
12	110	227	236	74	20	87	267	76	94	16	.00	.00
13	122	231	227	68	19	82	259	69	98	16	.00	.00
14	122	240	224	64	19	42	256	62	84	20	.00	.00
15	116	222	218	60	19	.00	265	56	76	16	.00	.00
16	116	262	214	56	19	.00	271	51	71	12	.00	.00
17	110	283	210	54	19	.65	267	54	69	11	.12	.00
18	117	290	206	52	18	17	255	48	71	12	.61	.00
19	112	303	199	49	17	32	286	44	52	11	3.0	.00
20	124	314	198	48	17	38	283	36	49	13	3.3	.00
21	128	337	192	44	17	39	279	30	52	14	5.5	.00
22	128	315	191	41	17	43	339	19	53	8.4	2.8	.00
23	127	287	186	40	17	46	315	22	40	3.2	.45	.00
24	142	267	180	39	16	46	314	20	34	4.6	3.1	.00
25	138	262	179	36	16	49	321	13	30	4.9	5.6	.00
26	128	259	174	35	16	51	323	15	29	.33	6.2	.00
27	143	261	172	33	17	52	324	16	35	.19	1.9	.00
28	144	261	166	31	15	54	317	11	26	1.8	.16	.00
29	159	255	165	29	14	57	291	32	39	.00	.01	.00
30	186	262	163	28	---	57	264	29	32	.32	.00	.00
31	262	---	154	28	---	56	---	24	---	.00	.01	---
TOTAL	3704	7485	6547	2136	569	1781.35	6806	2194	1837	506.74	32.81	.06
MEAN	119	250	211	68.9	19.6	57.5	227	70.8	61.2	16.3	1.06	.002
MAX	262	337	252	147	27	236	339	236	101	44	6.2	.06
MIN	86	183	154	28	14	.00	56	11	26	.00	.00	.00
AC-FT	7350	14850	12990	4240	1130	3530	13500	4350	3640	1010	65	.1

CAL YR 1979 TOTAL 169152.40 MEAN 463 MAX 2110 MIN 2.3 AC-FT 335500
WTR YR 1980 TOTAL 33598.96 MEAN 91.8 MAX 339 MIN .00 AC-FT 66640

06476000 JAMES RIVER AT HURON, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-52, 1956 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 1956 to October 1970, September 1971 to current year.
WATER TEMPERATURES: September 1956 to October 1970, September 1971 to current year.

REMARKS.--No flow Mar. 15, 16, July 29, 31, Aug. 3-16, 30, Sept. 2-30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,170 micromhos Mar. 14, 1965; minimum daily, 175 micromhos Mar. 30, Apr. 2, 1960.
WATER TEMPERATURES: Maximum daily, 31.0°C June 2, 1968; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum daily, 26.0°C July 14-16; minimum daily, 0.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT									
30...	1030	168	860	8.5	8.0	290	12	64	32
NOV									
26...	1405	251	830	8.4	1.0	280	21	63	30
DEC									
13...	1000	231	850	7.6	.0	310	45	70	34
JAN									
21...	1410	38	870	8.0	1.5	340	46	77	35
FEB									
27...	1605	16	1110	7.8	.0	430	93	99	45
MAR									
31...	1410	54	830	8.5	6.0	290	73	68	30
APR									
30...	1500	273	710	8.6	19.0	250	89	57	26
MAY									
28...	1400	5.5	970	8.4	24.0	350	81	78	38
JUL									
01...	0800	42	940	8.3	23.0	310	78	69	33

06476000 JAMES RIVER AT HURON, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS- SIUM DIS- SOLVED (MG/L AS NA) (00933)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT 30...	71	33	1.8	13	84	280	130	31	.2
NOV 26...	58	42	1.5	13	71	260	130	24	.2
DEC 13...	61	28	1.5	15	76	270	130	34	.2
JAN 21...	68	29	1.6	16	84	290	180	30	.3
FEB 27...	86	29	1.8	16	100	340	220	41	.3
MAR 31...	62	31	1.6	10	--	220	180	25	.2
APR 30...	66	35	1.8	13	--	160	170	40	.2
MAY 28...	79	32	1.8	15	--	270	190	39	.2
JUL 01...	73	33	1.8	14	--	230	210	43	.2

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	900	790	780	880	1020	1140	970	850	---	920	1020	
2	880	780	790	870	1040	1160	970	850	---	---	1040	
3	880	790	790	870	1040	1160	940	850	---	1040	1050	
4	880	780	800	860	1050	1160	940	850	---	---	---	
5	890	780	790	890	1050	1180	870	850	---	---	1060	
6	900	720	800	900	1040	1180	820	850	---	---	---	
7	910	770	800	890	1040	1180	830	960	---	---	1060	
8	910	760	780	910	1040	1190	860	970	---	---	---	
9	910	760	780	930	1050	1190	1020	970	---	---	---	
10	920	760	770	930	1050	1190	1000	980	---	950	---	
11	920	760	780	950	1050	1190	1020	980	---	950	1040	
12	920	750	780	970	1060	1200	1430	985	---	---	1020	
13	940	760	780	950	1080	1200	1540	990	---	---	1030	
14	960	770	790	950	1080	1200	1500	980	940	980	1040	
15	940	760	790	940	1080	1200	1320	970	---	---	---	
16	960	770	790	950	1100	1170	1280	970	---	---	1040	
17	980	760	800	950	1100	1170	1280	980	---	990	1040	
18	980	740	810	950	1100	1170	1320	980	---	1000	1040	
19	980	770	830	930	1100	1160	860	980	---	1000	---	
20	980	760	830	940	1110	1180	750	980	---	1000	1040	
21	980	760	840	930	1120	1180	960	980	950	1000	1040	
22	980	770	840	940	1110	1180	880	990	---	---	1040	
23	950	770	850	940	1130	1050	970	985	---	1020	1040	
24	950	770	850	940	1130	1050	970	985	---	1020	1040	
25	940	770	850	950	1140	1010	980	990	---	---	1040	
26	910	770	850	950	1140	940	760	990	---	1030	1040	
27	900	770	850	960	1140	940	760	995	900	1030	1040	
28	910	770	850	960	1140	920	750	1000	---	1030	1040	
29	910	770	850	970	1140	920	770	1000	---	1030	1010	
30	870	780	850	990	---	900	770	1000	900	1060	1010	
31	860	---	860	1000	---	930	---	990	---	---	1010	
MEAN	926	766	813	934	1090	1120	1000	957	923	1000	1040	

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

06476000 JAMES RIVER AT HURON, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)
OCT 30...	16	526	.72	239	.05	.250	.170	.17	.52
NOV 26...	8.4	483	.66	327	.02	.170	.130	.12	.37
DEC 13...	8.2	516	.70	322	.26	.130	.130	.13	.40
JAN 21...	4.1	505	.69	60.0	.03	.110	.080	.12	.37
FEB 27...	7.6	720	.98	31.1	.03	.170	.130	.16	.49
MAR 31...	6.0	514	.70	74.9	.01	.160	.130	.08	.25
APR 30...	2.2	471	.64	347	.02	.200	.110	.14	.43
MAY 28...	12	614	.84	9.12	.04	.280	.100	.14	.43
JUL 01...	15	596	.81	67.6	.12	.260	.200	.23	.71

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	6.0	.0	.0	.0	.0	2.0	17.0	20.0	23.0	26.0	
2	16.0	3.0	.0	.0	.0	.0	2.0	18.0	20.0	23.0	26.0	
3	16.0	3.0	.0	.0	.0	.0	2.0	18.0	19.0	23.0	26.0	
4	16.0	3.0	.0	.0	.0	.0	2.0	19.0	21.0	23.0	23.0	
5	14.0	3.0	.0	.0	.0	.0	2.0	18.0	20.0	23.0	23.0	
6	14.0	3.0	.0	.0	.0	.0	3.0	18.0	20.0	23.0	24.0	
7	13.0	2.0	.0	.0	.0	.0	2.0	15.0	20.0	25.0	25.0	
8	11.0	1.0	.0	.0	.0	.0	3.0	14.0	20.0	25.0	23.0	
9	10.0	1.0	.0	.0	.0	.0	4.0	14.0	19.0	25.0	23.0	
10	10.0	1.0	.0	.0	.0	.0	5.0	14.0	20.0	25.0	23.0	
11	11.0	1.0	.0	.0	.0	.0	7.0	14.0	21.0	25.0	23.0	
12	10.0	.0	.0	.0	.0	.0	7.0	14.0	22.0	25.0	23.0	
13	9.0	1.0	.0	.0	.0	.0	7.0	13.0	23.0	25.0	22.0	
14	8.0	1.0	.0	.0	.0	.0	5.0	14.0	21.0	26.0	23.0	
15	8.0	1.0	.0	.0	.0	.0	7.0	14.0	21.0	26.0	23.0	
16	9.0	2.0	.0	.0	.0	.0	9.0	14.0	22.0	26.0	22.0	
17	9.0	2.0	.0	.0	.0	.0	9.0	13.0	23.0	25.0	22.0	
18	10.0	2.0	.0	.0	.0	.0	10.0	14.0	23.0	24.0	23.0	
19	9.0	4.0	.0	.0	.0	.0	10.0	14.0	23.0	25.0	22.0	
20	10.0	3.0	.0	.0	.0	.0	12.0	16.0	22.0	25.0	22.0	
21	10.0	2.0	.0	.0	.0	.0	15.0	17.0	22.0	23.0	22.0	
22	9.0	1.0	.0	.0	.0	.0	17.0	18.0	22.0	22.0	22.0	
23	9.0	.0	.0	.0	.0	.0	15.0	18.0	22.0	23.0	22.0	
24	9.0	.0	.0	.0	.0	.0	14.0	19.0	22.0	23.0	22.0	
25	7.0	.0	.0	.0	.0	.0	14.0	19.0	23.0	22.0	22.0	
26	8.0	.0	.0	.0	.0	.0	15.0	20.0	23.0	22.0	21.0	
27	7.0	.0	.0	.0	.0	.0	15.0	21.0	23.0	23.0	19.0	
28	8.0	.0	.0	.0	.0	.0	15.0	21.0	23.0	23.0	19.0	
29	8.0	.0	.0	.0	.0	.0	15.0	21.0	23.0	23.0	19.0	
30	9.0	.0	.0	.0	---	2.0	15.0	20.0	22.0	23.0	19.0	
31	8.0	---	.0	.0	---	2.0	---	20.0	---	22.0	19.0	
MEAN	10.5	1.5	.0	.0	.0	.0	8.5	16.5	21.5	24.0	22.5	

06476500 SAND CREEK NEAR ALPENA, SD

LOCATION.--Lat 44°09'15", long 98°26'06", in NE¼NE¼ sec.19, T.108 N., R.63 W., Jerauld County, Hydrologic Unit 10160006, on left bank 5 ft (2 m) downstream from highway bridge, 4.0 mi (6.4 km) southwest of Alpena, 7.0 mi (11.3 km) upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, and 10.5 mi (16.9 km) upstream from interlink with Cain Creek.

DRAINAGE AREA.--240 mi² (622 km²), approximately.

PERIOD OF RECORD.--March 1950 to current year.

REVISED RECORDS.--WSP 1309: 1950(M).

GAGE.--Water-stage recorder. Altitude of gage is 1,315 ft (401 m). Prior to Sept. 17, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record Apr. 11 to May 30, which are poor. One observation of water temperature and specific conductance was made during the year.

AVERAGE DISCHARGE.--30 years, 8.86 ft³/s (0.251 m³/s), 6,420 acre-ft/yr (7.92 hm³/yr); median of yearly mean discharges, 5.7 ft³/s (0.16 m³/s), 4,100 acre-ft/yr (5.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,240 ft³/s (63.4 m³/s) Mar. 28, 1960, gage height, 13.35 ft (4.069 m); maximum gage height, 14.1 ft (4.30 m) Mar. 28, 1950 (backwater from ice); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.74 ft³/s (0.021 m³/s) Apr. 23, gage height, 7.74 ft (2.359 m), no peak above base of 50 ft³/s (1.42 m³/s); no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

7.4	0	7.6	0.40
7.5	.12	7.7	.88

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.46	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.67	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.74	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.72	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.69	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.61	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.46	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.35	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.27	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	5.06	.44	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.17	.014	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.74	.20	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	10	.9	.00	.00	.00	.00

CAL YR 1979 TOTAL 63.08 MEAN .17 MAX 4.0 MIN .00 AC-FT 125
WTR YR 1980 TOTAL 5.50 MEAN .015 MAX .74 MIN .00 AC-FT 11

06477000 JAMES RIVER NEAR FORESTBURG, SD

LOCATION.--Lat 43°58'26", long 98°04'14", in SW¼SW¼NW¼ sec.20, T.106 N., R.60 W., Sanborn County, Hydrologic Unit 10160011, on right bank 5.0 ft (2 m) downstream from highway bridge, 3.8 mi (6.1 km) southeast of Forestburg, 5.4 mi (8.7 km) downstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, and 6.1 mi (9.8 km) downstream from Sand Creek.

DRAINAGE AREA.--18,600 mi² (48,200 km²), approximately, of which about 4,790 mi² (12,400 km²) is probably noncontributing.

PERIOD OF RECORD.--March 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,208.34 ft (368.302 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Sept. 5, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm³), 408 mi (656 km) upstream since May 1953. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--30 years, 281 ft³/s (7.958 m³/s), 203,600 acre-ft/yr (251 hm³/yr); median of yearly mean discharges, 140 ft³/s (3.96 m³/s), 101,000 acre-ft/yr (120 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,500 ft³/s (354 m³/s) Apr. 9, 1969, gage height, 17.16 ft (5.230 m); no flow at times in 1950, 1955, 1959, 1961, 1970, 1976, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in March 1920 and March 1922 reached a stage of about 18 ft (5.49 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 336 ft³/s (9.52 m³/s) Apr. 27; maximum gage height, 5.24 ft (1.597 m) Dec. 1 (backwater from ice); minimum daily, 0.05 ft³/s (0.001 m³/s) Sept. 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	250	225	133	31	18	61	298	19	21	3.9	2.1
2	74	254	223	127	31	18	58	275	25	19	3.3	2.0
3	78	227	222	120	30	18	58	254	27	21	2.8	1.6
4	85	205	219	116	29	17	58	226	29	24	2.1	1.5
5	87	207	214	110	28	17	58	200	30	24	1.7	1.3
6	93	214	211	104	27	18	60	180	44	30	1.4	1.8
7	93	214	216	102	27	19	71	161	64	33	1.2	1.9
8	96	214	220	98	26	20	100	142	92	39	1.6	1.2
9	105	202	220	93	25	22	132	115	104	37	2.4	.92
10	107	177	220	89	25	27	168	101	98	29	2.4	.74
11	105	252	218	86	24	37	202	101	94	20	2.5	.62
12	112	268	216	82	24	35	238	99	85	16	1.9	.45
13	114	249	210	79	23	31	259	82	63	14	1.7	.40
14	110	245	208	75	23	30	265	77	100	14	1.2	.43
15	109	231	200	70	23	35	262	69	101	13	1.1	.27
16	117	238	196	66	23	39	267	60	82	11	3.0	.16
17	123	251	193	63	23	35	273	53	69	11	3.0	.21
18	134	262	191	61	22	33	271	48	60	11	2.6	.12
19	146	271	189	59	22	32	269	46	54	10	3.2	.12
20	149	283	186	56	22	27	273	42	49	10	2.8	.07
21	157	299	182	54	22	21	277	35	43	9.2	2.4	.12
22	166	305	179	50	22	28	285	29	33	8.4	2.2	.10
23	163	305	177	47	22	37	304	24	32	8.0	2.0	.13
24	152	290	172	43	22	35	316	20	38	7.6	2.0	.10
25	154	272	169	41	21	44	327	17	36	8.0	2.1	.07
26	151	260	164	39	21	51	333	15	44	7.6	2.3	.10
27	150	250	161	37	19	50	333	13	40	7.6	2.3	.08
28	152	242	158	36	19	52	334	12	44	6.6	2.1	.07
29	148	237	150	35	18	57	330	12	52	6.3	1.9	.05
30	159	230	147	33	---	61	318	12	34	5.1	2.0	.05
31	199	---	141	32	---	62	---	12	---	4.6	2.0	---
TOTAL	3861	7404	5997	2236	694	1026	6560	2830	1705	486.0	69.1	18.78
MEAN	125	247	193	72.1	23.9	33.1	219	91.3	56.8	15.7	2.23	.63
MAX	199	305	225	133	31	62	334	298	104	39	3.9	2.1
MIN	73	177	141	32	18	17	58	12	19	4.6	1.1	.05
AC-FT	7660	14690	11900	4440	1380	2040	13010	5610	3380	964	137	37

CAL YR 1979 TOTAL 164051.80 MEAN 449 MAX 1910 MIN 6.3 AC-FT 325400
WTR YR 1980 TOTAL 32886.88 MEAN 89.9 MAX 334 MIN .05 AC-FT 65230

06477500 FIRESTEEL CREEK NEAR MOUNT VERNON, SD

LOCATION.--Lat 43°46'30", long 98°14'33", in SW¼SW¼ sec.26, T.104 N., R.62 W., Davison County, Hydrologic Unit 10160011, near center of span on downstream side of highway bridge, 4.5 mi (7.2 km) north of Mount Vernon, 5.2 mi (8.4 km) downstream from West Firesteel Creek, and 12 mi (19 km) northwest of Mitchell.

DRAINAGE AREA.--540 mi² (1,400 km²), approximately.

PERIOD OF RECORD.--September 1955 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,297.22 ft (395.393 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 28, 1972, nonrecording gage and crest-stage gage.

REMARKS.--Records fair except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--25 years, 20.9 ft³/s (0.592 m³/s), 15,140 acre-ft/yr (18.7 hm³/yr); median of yearly mean discharges, 7.9 ft³/s (0.22 m³/s), 5,700 acre-ft/yr (7.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,610 ft³/s (187 m³/s) Apr. 4, 1969, gage height, 15.34 ft (4.676 m); maximum gage height, 17.12 ft (5.218 m) Apr. 3, 1969 (backwater from ice); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1.0 ft³/s (0.028 m³/s) June 27, gage height, 2.95 ft (0.899 m), no peak above base of 100 ft³/s (2.83 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.16	.04	.06	.00	.00	.04	.02	.00	.00	.00	.06
2	.00	.10	.04	.06	.00	.00	.05	.02	.01	.00	.00	.05
3	.00	.10	.03	.06	.00	.00	.06	.02	.02	.00	.00	.02
4	.00	.06	.04	.06	.00	.01	.10	.00	.03	.00	.00	.02
5	.00	.05	.04	.06	.00	.01	.08	.00	.05	.00	.00	.00
6	.00	.04	.05	.05	.00	.01	.08	.00	.03	.00	.00	.00
7	.00	.02	.06	.04	.00	.01	.10	.00	.02	.00	.00	.00
8	.00	.03	.06	.02	.00	.02	.13	.00	.03	.00	.00	.00
9	.00	.02	.07	.02	.00	.03	.10	.00	.20	.00	.00	.00
10	.00	.03	.06	.02	.00	.04	.05	.00	.00	.00	.00	.00
11	.00	.05	.08	.02	.00	.06	.06	.00	.00	.00	.00	.00
12	.00	.06	.07	.02	.00	.07	.08	.00	.00	.00	.00	.00
13	.00	.04	.06	.03	.00	.09	.20	.00	.00	.00	.20	.00
14	.00	.02	.05	.03	.00	.12	.06	.00	.00	.00	.16	.00
15	.00	.03	.05	.03	.00	.16	.05	.00	.00	.00	.45	.00
16	.00	.02	.04	.02	.00	.18	.04	.00	.00	.00	.95	.00
17	.00	.02	.04	.02	.00	.20	.02	.01	.00	.00	.60	.00
18	.00	.10	.05	.01	.00	.06	.04	.00	.00	.00	.45	.00
19	.00	.06	.07	.01	.00	.04	.04	.00	.00	.00	.06	.00
20	.00	.06	.09	.01	.00	.10	.03	.00	.00	.00	.03	.00
21	.00	.10	.10	.01	.00	.10	.01	.01	.00	.00	.02	.00
22	.02	.08	.09	.01	.00	.16	.00	.00	.00	.00	.00	.00
23	.03	.04	.09	.01	.00	.25	.00	.00	.00	.00	.02	.00
24	.02	.05	.08	.01	.00	.02	.00	.00	.00	.00	.04	.00
25	.02	.05	.07	.00	.00	.00	.00	.00	.00	.00	.06	.00
26	.01	.08	.07	.00	.00	.02	.00	.00	.00	.00	.04	.00
27	.02	.08	.07	.00	.00	.06	.00	.00	.03	.00	.05	.00
28	.03	.05	.07	.00	.00	.04	.00	.00	.00	.00	.02	.00
29	.03	.04	.07	.00	.00	.06	.02	.01	.00	.00	.03	.00
30	.02	.04	.06	.00	---	.06	.04	.02	.00	.00	.04	.00
31	.05	---	.06	.00	---	.05	---	.00	---	.00	.04	---
TOTAL	.25	1.68	1.94	.69	.00	2.03	1.48	.11	.42	.00	3.26	.15
MEAN	.008	.056	.063	.022	.000	.065	.049	.004	.014	.000	.11	.005
MAX	.05	.16	.10	.06	.00	.25	.20	.02	.20	.00	.95	.06
MIN	.00	.02	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.5	3.3	3.8	1.4	.00	4.0	2.9	.2	.8	.00	6.5	.3

CAL YR 1979 TOTAL 121.68 MEAN .33 MAX 5.5 MIN .00 AC-FT 241
WTR YR 1980 TOTAL 12.01 MEAN .033 MAX .95 MIN .00 AC-FT 24

06478052 ENEMY CREEK NEAR MITCHELL, SD

LOCATION.--Lat 43°38'33", long 97°59'09", in NW¼NW¼ (revised) sec.13, T.102 N., R.60 W., Davison County, Hydrologic Unit 10160011, on left bank 3 ft (0.9 m) downstream from highway bridge, 4.5 mi (7.2 km) southeast of Mitchell, and 7.3 mi (11.7 km) above mouth.

DRAINAGE AREA.--181 mi^2 (469 km^2), approximately.

PERIOD OF RECORD.--October 1975 to current year.

REVISED RECORDS.--WDR SD-78-1: 1977.

GAGE.--Water-stage recorder. Altitude of gage is 1,280 ft (390 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--5 years, 3.50 ft^3/s (0.099 m^3/s), 2,540 acre-ft/yr (3.13 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,390 ft^3/s (39.4 m^3/s) Mar. 19, 1978, gage height, 11.27 ft (3.435 m); maximum gage height, 12.54 ft (3.822 m) Mar. 19, 1978 (backwater from ice); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.90 ft^3/s (0.025 m^3/s) Apr. 9, gage height, 5.38 ft (1.640 m); maximum gage height, 5.47 ft (1.667 m) Feb. 26 (backwater from ice); no peak above base of 20 ft^3/s (0.57 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.06	.08	.00	.05	.55	.07	.00	.00	.00	.00
2	.00	.00	.06	.08	.00	.06	.41	.08	.00	.00	.00	.00
3	.00	.00	.07	.07	.01	.08	.47	.07	.00	.00	.00	.00
4	.00	.00	.08	.07	.02	.07	.50	.07	.00	.00	.00	.00
5	.00	.00	.09	.08	.08	.04	.50	.07	.00	.00	.00	.00
6	.00	.01	.12	.08	.10	.05	.45	.05	.00	.00	.00	.00
7	.00	.02	.14	.07	.10	.05	.56	.05	.00	.00	.00	.00
8	.00	.02	.11	.05	.09	.06	.56	.03	.00	.00	.00	.00
9	.00	.02	.09	.03	.10	.09	.72	.03	.02	.00	.00	.00
10	.00	.03	.12	.01	.10	.17	.73	.04	.00	.00	.00	.00
11	.00	.02	.17	.00	.10	.12	.50	.02	.00	.00	.00	.00
12	.00	.02	.12	.00	.10	.10	.50	.02	.00	.00	.00	.00
13	.00	.02	.08	.02	.08	.09	.50	.04	.00	.00	.00	.00
14	.00	.02	.07	.12	.06	.12	.50	.08	.00	.00	.00	.00
15	.00	.02	.07	.63	.06	.31	.44	.12	.00	.00	.00	.00
16	.00	.02	.06	.27	.06	.35	.43	.09	.00	.00	.00	.00
17	.00	.02	.07	.17	.08	.35	.52	.09	.00	.00	.00	.00
18	.00	.02	.08	.12	.08	.35	.40	.12	.00	.00	.00	.00
19	.00	.02	.10	.12	.08	.23	.40	.10	.00	.00	.00	.00
20	.00	.01	.13	.10	.09	.17	.27	.10	.00	.00	.00	.00
21	.00	.02	.12	.09	.15	.14	.27	.09	.00	.00	.00	.00
22	.00	.07	.10	.08	.25	.14	.20	.06	.00	.00	.00	.00
23	.00	.08	.06	.08	.28	.14	.08	.02	.00	.00	.00	.00
24	.00	.08	.07	.23	.27	.18	.07	.00	.00	.00	.00	.00
25	.00	.07	.07	.25	.23	.18	.07	.00	.00	.00	.00	.00
26	.00	.07	.08	.08	.15	.26	.07	.00	.00	.00	.00	.00
27	.00	.06	.12	.04	.08	.39	.08	.00	.00	.00	.00	.00
28	.00	.06	.13	.03	.05	.40	.08	.00	.00	.00	.00	.00
29	.00	.06	.08	.00	.04	.40	.08	.00	.00	.00	.00	.00
30	.00	.06	.06	.00	---	.50	.07	.00	.00	.00	.00	.00
31	.00	---	.08	.00	---	.57	---	.00	---	.00	.00	---
TOTAL	.00	.92	2.90	3.05	2.89	6.21	10.98	1.51	.02	.00	.00	.00
MEAN	.000	.031	.094	.098	.10	.20	.37	.049	.001	.000	.000	.000
MAX	.00	.08	.17	.63	.28	.57	.73	.12	.02	.00	.00	.00
MIN	.00	.00	.06	.00	.00	.04	.07	.00	.00	.00	.00	.00
AC-FT	.00	1.8	5.8	6.0	5.7	12	22	3.0	.04	.00	.00	.00

CAL YR 1979 TOTAL 673.52 MEAN 1.85 MAX 32 MIN .00 AC-FT 1340
WTR YR 1980 TOTAL 28.48 MEAN .078 MAX .73 MIN .00 AC-FT 56

06478390 WOLF CREEK NEAR CLAYTON, SD

LOCATION.--Lat 43°22'18", long 97°36'12", in SE¼SE¼SW¼ sec.20, T.99 N., R.57 W., Hutchinson County, Hydrologic Unit 10160011, on left bank 5 ft (2 m) upstream from highway bridge, 4.1 mi (6.6 km) upstream from mouth and 5.6 mi (9.0 km) southeast of Clayton.

DRAINAGE AREA.--386 mi² (1,000 km²), approximately.

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,210 ft (369 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--5 years, 18.2 ft³/s (0.515 m³/s), 13,190 acre-ft/yr (16.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,280 ft³/s (36.2 m³/s) Mar. 22, 1979, gage height, 11.97 ft (3.648 m); maximum gage height, 12.22 ft (3.725 m) Mar. 19, 1979 (backwater from ice); no flow at times in 1976, 1977, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23 ft³/s (0.65 m³/s) at 1600 hours, June 7, no peak above base of 175 ft³/s (4.96 m³/s); maximum gage height, 5.21 ft (1.588 m) Feb. 24 (backwater from ice); no flow July 13 to Sept. 30.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 16 to Mar. 19)

2.55	0	2.8	0.76	3.1	3.9
2.6	.05	2.9	1.4	3.4	9.7
2.7	.28	3.0	2.4	3.6	15

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	10	7.0	3.5	.65	1.5	5.4	2.2	2.4	1.1	.00	.00
2	1.1	7.5	7.4	3.5	.62	1.5	5.0	2.1	2.5	.96	.00	.00
3	1.1	6.3	5.0	3.5	.61	1.6	6.7	2.1	2.8	.82	.00	.00
4	1.1	5.5	4.7	3.4	.60	1.7	6.8	2.0	2.5	.77	.00	.00
5	1.1	5.7	5.4	3.3	.73	1.9	5.9	1.7	3.3	.75	.00	.00
6	1.0	5.0	6.6	2.9	.88	2.0	5.6	1.8	4.4	.70	.00	.00
7	1.1	4.7	7.3	2.2	.96	1.9	5.6	1.6	12	.56	.00	.00
8	1.1	4.1	7.5	1.8	1.0	2.0	7.4	1.5	15	.37	.00	.00
9	1.0	4.4	6.4	1.4	1.1	2.2	9.0	1.5	13	.28	.00	.00
10	1.1	5.7	4.7	1.3	1.2	2.7	9.0	1.5	9.3	.27	.00	.00
11	1.1	5.9	5.8	1.4	1.2	3.3	9.4	1.4	8.5	.18	.00	.00
12	1.1	3.4	6.0	1.5	1.2	3.8	9.6	1.4	7.5	.03	.00	.00
13	1.1	3.3	4.3	2.0	1.3	4.5	9.9	1.5	6.9	.00	.00	.00
14	1.2	3.2	4.3	3.3	1.3	5.6	11	1.6	5.4	.00	.00	.00
15	1.3	4.0	3.5	4.3	1.3	6.8	9.5	1.4	7.0	.00	.00	.00
16	1.4	2.3	2.0	4.8	1.3	8.0	8.5	1.2	5.7	.00	.00	.00
17	1.4	2.0	1.8	4.7	1.2	9.0	8.4	1.5	4.5	.00	.00	.00
18	1.9	2.8	1.2	4.0	1.1	10	8.2	1.8	3.5	.00	.00	.00
19	3.2	5.4	1.5	2.8	2.0	11	7.5	2.1	2.5	.00	.00	.00
20	2.9	7.5	3.0	2.3	2.7	12	6.8	1.8	1.7	.00	.00	.00
21	2.5	9.4	4.2	2.0	3.1	11	6.6	1.7	1.3	.00	.00	.00
22	2.8	8.6	5.0	1.8	3.0	6.6	6.4	1.7	.96	.00	.00	.00
23	2.5	8.0	5.4	1.7	3.0	6.1	5.0	1.5	.76	.00	.00	.00
24	2.4	7.4	4.7	1.6	2.9	6.0	4.0	1.4	.62	.00	.00	.00
25	2.2	6.3	4.2	1.5	2.8	5.1	3.5	1.3	.55	.00	.00	.00
26	2.3	5.6	3.9	1.4	1.5	5.8	3.2	1.6	.47	.00	.00	.00
27	2.4	8.6	3.8	1.3	1.6	5.6	3.1	2.3	1.3	.00	.00	.00
28	2.4	7.7	3.7	1.1	1.7	5.5	3.0	2.1	1.9	.00	.00	.00
29	2.4	6.8	3.7	.92	1.6	5.9	2.7	1.7	1.6	.00	.00	.00
30	3.6	6.5	3.6	.82	---	6.4	2.4	2.2	1.3	.00	.00	.00
31	11	---	3.6	.70	---	6.3	---	2.4	---	.00	.00	---
TOTAL	64.0	173.6	141.2	72.74	44.15	163.3	195.1	53.6	131.16	6.79	.00	.00
MEAN	2.06	5.79	4.55	2.35	1.52	5.27	6.50	1.73	4.37	.22	.000	.000
MAX	11	10	7.5	4.8	3.1	12	11	2.4	15	1.1	.00	.00
MIN	1.0	2.0	1.2	.70	.60	1.5	2.4	1.2	.47	.00	.00	.00
AC-FT	127	344	280	144	88	324	387	106	260	13	.00	.00

CAL YR 1979 TOTAL 13543.23 MEAN 37.1 MAX 1050 MIN .45 AC-FT 26860
WTR YR 1980 TOTAL 1045.64 MEAN 2.86 MAX 15 MIN .00 AC-FT 2070

06478500 JAMES RIVER NEAR SCOTLAND, SD

LOCATION.--Lat 43°11'09", long 97°38'07", in SW¼SW¼ sec.30, T.97 N., R.57 W., Hutchinson County, Hydrologic Unit 10160011, on right bank 5.0 ft (2 m) downstream from highway bridge, 0.3 mi (0.5 km) upstream from Dawson Creek and 5.2 mi (8.4 km) northeast of Scotland.

DRAINAGE AREA.--21,550 mi² (55,810 km²), approximately, of which about 4,790 mi² (12,400 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1928 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 786: Drainage area. WSP 956: 1937-38. WSP 1279: 1932, 1948.

GAGE.--Water-stage recorder and rock and earth control. Datum of gage is 1,168.51 ft (356.162 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 28, 1972, at site 0.25 mi (0.4 km) downstream at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm³), 527 mi (848 km) upstream since May 1953. Occasional backwater caused by Dawson Creek; reverse flow occurred for part of May 15, 1961, from information by local residents.

AVERAGE DISCHARGE.--52 years, 375 ft³/s (10.62 m³/s), 271,700 acre-ft/yr (335 hm³/yr); median of yearly mean discharges, 190 ft³/s (5.38 m³/s), 138,000 acre-ft/yr (170 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,200 ft³/s (430 m³/s) Apr. 3, 1962, gage height, 18.74 ft (5.712 m); no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 322 ft³/s (9.12 m³/s) Apr. 30; maximum gage height, 9.67 ft (2.947 m) Nov. 28 (backwater from ice); minimum daily, 4.2 ft³/s (0.12 m³/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	117	255	140	180	61	76	102	315	42	50	6.7	11
2	112	258	140	182	58	71	110	309	39	46	6.3	11
3	107	234	170	175	53	66	120	308	37	49	6.1	10
4	103	228	201	170	48	68	136	308	34	44	5.9	9.9
5	100	254	244	166	43	63	133	289	35	39	5.7	9.4
6	94	280	277	166	44	63	121	264	36	37	5.0	8.7
7	95	270	305	142	45	64	117	240	42	35	4.8	7.9
8	89	244	287	143	46	63	130	224	45	32	5.9	7.7
9	89	234	289	154	45	63	141	192	50	27	7.9	7.5
10	95	226	288	154	45	71	138	170	46	24	9.4	6.5
11	99	226	254	145	43	72	134	134	44	22	10	6.3
12	98	217	182	130	42	70	136	125	43	20	12	6.3
13	109	203	170	125	42	67	151	116	47	19	12	5.9
14	109	200	170	121	44	73	169	110	58	18	11	5.7
15	107	226	180	118	44	67	194	97	73	16	11	5.7
16	107	251	200	122	44	110	220	67	75	16	11	5.5
17	115	262	226	120	44	109	244	87	74	15	11	5.0
18	121	263	213	114	43	107	261	95	73	14	11	4.8
19	128	259	202	111	42	108	268	96	72	13	12	4.7
20	127	252	208	110	42	109	277	87	74	12	12	4.8
21	132	282	208	107	44	107	277	82	72	12	12	4.8
22	152	334	208	104	62	98	264	73	69	11	12	5.0
23	170	334	202	99	68	86	266	65	64	11	12	4.7
24	169	279	206	93	69	88	264	57	57	9.1	12	5.0
25	163	287	208	93	68	83	257	52	49	9.6	11	4.8
26	154	327	204	89	65	76	259	48	52	9.4	12	4.5
27	156	265	200	86	72	73	266	48	52	9.4	13	4.3
28	159	220	194	80	79	78	288	45	55	8.9	12	4.3
29	162	160	192	73	78	84	303	43	53	8.7	12	4.3
30	170	145	190	70	---	93	315	43	53	8.0	12	4.2
31	205	---	188	65	---	96	---	43	---	6.7	11	---
TOTAL	3915	7475	6546	3807	1523	2538	6061	4252	1615	651.8	307.7	190.2
MEAN	126	249	211	123	52.5	81.9	202	137	53.8	21.0	9.93	6.34
MAX	205	334	305	182	79	110	315	315	75	50	13	11
MIN	89	145	140	65	42	63	102	43	34	6.7	4.8	4.2
AC-FT	7770	14830	12980	7550	3020	5030	12020	8430	3200	1290	610	377

CAL YR 1979 TOTAL 203625.0 MEAN 558 MAX 3240 MIN 27 AC-FT 403900
WTR YR 1980 TOTAL 38881.7 MEAN 106 MAX 334 MIN 4.2 AC-FT 77120

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued
(National stream-quality accounting network station)
(National pesticide water-monitoring network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956-64, 1967-73, 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: January 1953 to September 1969, October 1974 to current year.

REMARKS.--Prior to October 1969, continuous temperature thermograph at station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,660 micromhos Jan. 9, 1977; minimum daily, 300 micromhos Mar 19, 1977.
WATER TEMPERATURES: Maximum, 32.0°C Aug. 1, 2, 1957; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,950 micromhos Sept. 27, 29, 30; minimum daily, 990 micromhos Dec. 5, 6.
WATER TEMPERATURES: Maximum daily, 27.0°C July 14; minimum daily, 0.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
24...	1330	170	1220	8.3	7.0	10	11.8	150	40	470	170	110
NOV												
28...	1520	220	1120	7.0	.5	5.7	13.7	K20	70	370	79	85
DEC												
18...	1300	214	1080	7.5	.0	5.6	13.9	80	70	430	130	100
JAN												
30...	1530	70	1600	7.2	.5	4.1	16.8	K3	K6	580	250	140
FEB												
27...	1500	72	1320	7.4	1.0	5.6	10.3	210	K1460	620	350	150
MAR												
19...	1615	108	1360	8.3	5.0	13	15.1	K8	K3	560	330	140
APR												
24...	1700	263	1190	8.4	15.5	48	9.8	K11	40	510	260	120
MAY												
22...	1540	73	1210	8.5	22.5	24	11.6	70	120	430	210	100
JUN												
26...	1100	51	1500	8.0	28.0	14	7.9	--	K180	550	320	120
JUL												
24...	0900	9.1	1530	7.8	24.0	31	5.0	600	530	510	230	110
AUG												
29...	0900	12	1620	8.0	23.5	27	6.8	18	100	640	380	140
SEP												
26...	0915	4.5	1800	7.9	14.0	15	8.0	38	K75	710	480	150

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM+POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT												
24...	48	84	38	1.7	15	99	300	310	39	.3	19	830
NOV												
28...	38	67	39	1.5	14	81	290	210	28	.3	12	678
DEC												
18...	44	74	38	1.6	14	88	300	260	28	.3	10	759
JAN												
30...	55	84	24	1.5	15	99	330	440	35	.4	9.6	1030
FEB												
27...	60	74	20	1.3	16	90	270	450	36	.3	14	985
MAR												
19...	51	66	20	1.2	12	78	230	450	29	.3	9.9	986
APR												
24...	51	100	29	1.9	14	--	250	390	40	.3	4.5	918
MAY												
22...	44	87	30	1.8	14	--	220	350	52	.4	9.7	796
JUN												
26...	61	110	30	2.0	17	--	230	460	62	.3	17	1070
JUL												
24...	57	130	35	2.5	19	--	280	450	58	.3	22	1110
AUG												
29...	71	140	31	2.4	20	--	260	590	62	.4	19	1260
SEP												
26...	82	130	28	2.1	19	--	230	650	65	.5	18	1490

K Non-ideal colony count.

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 24...	807	1.13	383	--	.19	.21	.03	.04	.02	.02	.67	1.6
NOV 28...	629	.92	505	--	.05	.05	.04	.05	.06	.07	.96	2.0
DEC 18...	711	1.03	451	--	.15	.19	.02	.03	.02	.02	.87	1.4
JAN 30...	979	1.40	133	--	.10	.08	.01	.01	.06	.07	.37	1.4
FEB 27...	965	1.34	133	--	.60	.60	.84	1.1	.84	1.0	1.3	1.7
MAR 19...	897	1.34	288	--	.17	.15	.04	.05	.13	.16	.92	1.4
APR 24...	871	1.25	652	--	.05	.02	.00	.00	.04	.05	.72	1.7
MAY 22...	789	1.08	157	--	.01	.00	.03	.04	.00	.00	.88	1.8
JUN 26...	986	1.46	116	--	.05	.03	.06	.08	.09	.11	1.2	2.4
JUL 24...	1020	1.51	27.3	--	.00	.00	.00	.00	.04	.05	1.3	1.8
AUG 29...	1200	1.71	42.5	--	.00	.00	.02	.03	.15	.18	1.3	1.4
SEP 26...	1250	2.03	18.3	--	.00	.00	.00	.00	.07	.08	1.1	1.9

DATE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, ORTHOPHOSPHATE TOTAL (MG/L AS P) (70507)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P) (00673)	PHOSPHORUS, HYDRO. + ORTHO DISSOL. (MG/L AS P) (00677)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)
OCT 24...	.70	.90	1.6	.69	1.8	8.0	--	--	--	.140	.250
NOV 28...	1.0	1.1	2.1	1.1	2.2	9.5	--	--	--	.180	.300
DEC 18...	.89	.51	1.4	1.0	1.6	7.0	--	--	--	.150	.190
JAN 30...	.38	1.1	1.5	.48	1.6	7.0	--	--	--	.110	.370
FEB 27...	2.1	.40	2.5	2.7	3.1	14	--	--	--	.360	.490
MAR 19...	.96	.54	1.5	1.1	1.6	7.3	--	--	--	.120	.260
APR 24...	.72	.98	1.7	.77	1.7	7.6	--	--	--	.060	.260
MAY 22...	.91	.89	1.8	.92	1.8	8.0	--	--	--	.070	.320
JUN 26...	1.3	1.2	2.5	1.4	2.5	11	--	--	--	.150	.380
JUL 24...	1.3	.50	1.8	1.3	1.8	8.0	--	--	--	.220	.430
AUG 29...	1.3	.20	1.5	1.3	1.5	6.6	--	--	--	.130	.540
SEP 26...	1.1	.90	2.0	1.1	2.0	8.9	--	--	--	.060	.180

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)
OCT 24...	.77	--	17	.6	--	--	--	--	--	--	--
NOV 28...	.92	--	--	--	17	--	--	--	--	--	--
DEC 18...	.58	--	--	--	13	100000	--	--	--	--	--
JAN 30...	1.1	--	24	1.9	--	--	--	--	--	--	--
FEB 27...	1.5	--	--	--	22	--	--	--	--	--	--
MAR 19...	.80	--	--	--	12	--	--	--	--	--	--
APR 24...	.80	--	17	--	--	41000	--	--	--	--	--
MAY 22...	.98	--	--	--	19	160000	--	--	--	--	--
JUN 26...	1.2	--	--	--	25	180000	--	--	--	--	--
JUL 24...	1.3	--	11	--	--	24000	--	--	--	--	--
AUG 29...	1.7	--	--	--	18	35000	44.3	35.7	60.3	17.2	143
SEP 26...	.55	--	--	--	22	8800	--	--	--	--	--

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT 24...	1330	170	96	44	--	--	--	--	87	95	100	--
NOV 28...	1520	220	121	90	--	--	--	--	98	98	100	--
DEC 18...	1300	214	83	49	--	--	--	--	95	100	--	--
JAN 30...	1530	70	84	11	--	--	--	--	66	88	100	--
FEB 27...	1500	72	122	16	--	--	--	--	90	98	100	--
MAR 19...	1615	108	144	42	--	--	--	--	68	96	100	--
APR 24...	1700	263	193	137	--	--	--	--	97	100	--	--
MAY 22...	1540	73	175	34	--	--	--	--	95	100	--	--
JUN 26...	1100	51	142	15	--	--	--	--	90	100	--	--
JUL 24...	0900	9.1	203	5.0	--	--	--	--	95	100	--	--
AUG 29...	0900	12	110	3.7	--	--	--	--	96	100	--	--
SEP 26...	0915	4.5	169	2.1	--	--	--	--	90	100	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT 24...	1330	6	1	5	0	0	<1	0	0	0	0
JAN 30...	1530	3	1	2	2	0	2	0	0	0	0
APR 24...	1700	5	3	2	4	2	2	0	0	0	0
JUL 24...	0900	12	0	12	0	--	<1	10	0	10	3

< Less than.

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)
OCT 24...	0	<3	2	2	0	400	<10	2	2	0	630
JAN 30...	0	<3	2	2	0	270	10	8	5	3	710
APR 24...	--	<3	4	0	4	2600	40	4	3	1	1300
JUL 24...	0	3	5	3	2	1600	<10	7	7	0	2400

DATE	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY DISSOLVED (UG/L AS HG) (71890)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
OCT 24...	500	130	.1	.1	.0	1	1	0	10	4	6
JAN 30...	140	570	.0	.0	.0	1	0	1	10	7	<3
APR 24...	690	610	.0	.0	.0	0	0	0	40	--	<3
JUL 24...	500	1900	.0	.0	.0	1	0	1	10	--	<3

DATE	TIME	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL (UG/L) (39350)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)
OCT 24...	1330	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 27...	1500	ND	--	ND	--	ND	--	ND	--	ND	--

DATE	DIAZINON, TOTAL (UG/L) (39570)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DIELDRIN TOTAL (UG/L) (39380)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)
OCT 24...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 27...	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL TRITHION, TOTAL (UG/L) (39790)
OCT 24...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 27...	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	PARATHION, TOTAL (UG/L) (39540)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)
OCT 24...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 27...	--	ND	--	ND	--	ND	--	--	--	--

< Less than.
ND Not detected.

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	JUN 26,80		JUL 24,80		AUG 29,80		SEP 26,80	
TIME	1100		0900		0900		0915	
TOTAL CELLS/ML	180000		24000		35000		8800	
DIVERSITY: DIVISION	1.2		1.6		1.3		1.8	
.CLASS	1.2		1.6		1.3		1.8	
..ORDER	1.8		2.2		2.2		2.2	
...FAMILY	2.3		2.4		2.4		2.7	
....GENUS	2.5		2.6		3.1		3.0	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	*	0	--	-	--	-	--	-
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	400	5
...HYDRODICTYACEAE								
....PEDIASTRUM	--	-	--	-	--	-	*	0
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	2200	1	1000	4	780	2	570	6
....CHLORELLA	1000	1	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	*	0
....CLOSTERIOPSIS	--	-	--	-	--	-	*	0
....DICTYOSPHAERIUM	1600	1	--	-	--	-	--	-
....GLOEOACTINIUM	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	710	3	430	1	--	-
....OOCYSTIS	2200	1	--	-	500	1	--	-
....SELENASTRUM	--	-	200	1	360	1	130	2
....TETRAEDRON	*	0	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	*	0	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	400	2	280	1	940	11
....SCENEDESMUS	3900	2	1400	6	5300#	15	270	3
....TETRASTRUM	--	-	--	-	570	2	--	-
..TETRASPORALES								
...COCCOMYXACEAE								
....ELAKATOTHRIX	1200	1	--	-	--	-	--	-
...PALMELLACEAE								
....SPHAEROCYSTIS	11000	6	--	-	570	2	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	--	-	8400#	36	--	-	--	-
....CHLAMYDOMONAS	1600	1	--	-	1200	3	600	7
...PHACOTACEAE								
....PHACOTUS	--	-	--	-	--	-	--	-
...POLYBLEPHARIDACEAE								
....SPERMATOZOOPSIS	--	-	--	-	*	0	--	-
..ZYGNEMATALES								
...DESMIDIACEAE								
....STAURASTRUM	--	-	--	-	*	0	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	6300	3	710	3	1400	4	130	2
....MELOSIRA	*	0	610	3	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-
..PENNALES								
...DIATOMACEAE								
....DIATOMA	--	-	--	-	--	-	--	-
...FRAGILARIACEAE								
....SYNEDRA	*	0	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	*	0	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	4700	3	200	1	*	0	100	1
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	--	-	--	-	--	-	--	-
.XANTHOPHYCEAE								
..HETEROCOCCALES								
...CHLOROTHECIACEAE								
....OPHIOCYTIUM	--	-	--	-	*	0	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 27,79	SEP 24,79	DEC 18,79	APR 24,80	MAY 22,80
TIME	1530	1530	1300	1700	1540
TOTAL CELLS/ML	640	140000	100000	41000	160000
DIVERSITY: DIVISION	1.2	1.6	0.2	1.4	1.4
.CLASS	1.2	1.6	0.2	1.4	1.4
..ORDER	1.8	1.7	0.3	1.7	1.7
...FAMILY	1.8	2.1	0.6	2.4	2.6
....GENUS	1.9	3.2	1.4	3.7	3.8

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	130	2		
...CRYPTOMONADACEAE										
....CRYPTOMONAS	*	0	200	1	500	1	440	5		
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	--	-	--	-	2300	7	--	-		
....ANACYSTIS	12000	6	200	1	10000#	30	200	2		
....COCCOCHLORIS	--	-	--	-	--	-	--	-		
....GOMPHOSPHAERIA	--	-	--	-	1700	5	--	-		
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	16000	9	--	-	--	-	--	-		
....ANABAENOPSIS	3700	2	--	-	--	-	--	-		
...OSCILLATORIACEAE										
....OSCILLATORIA	100000#	58	7900#	33	7800#	23	3700#	42		
...RIVULARIACEAE										
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-		
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...ASTASIACEAE										
....RHABDOMONAS	4100	2	--	-	--	-	--	-		
...EUGLENACEAE										
....EUGLENA	2200	1	710	3	*	0	200	2		
....PHACUS	--	-	--	-	--	-	*	0		
....TRACHELOMONAS	*	0	610	3	210	1	810	9		
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	*	0	300	1	--	-	--	-		

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 27,79		SEP 24,79		DEC 18,79		APR 24,80		MAY 22,80	
TIME	1530		1530		1300		1700		1540	
TOTAL CELLS/ML	640		140000		100000		41000		160000	
DIVERSITY: DIVISION	1.2		1.6		0.2		1.4		1.4	
.CLASS	1.2		1.6		0.2		1.4		1.4	
..ORDER	1.8		1.7		0.3		1.7		1.7	
...FAMILY	1.8		2.1		0.6		2.4		2.6	
....GENUS	1.9		3.2		1.4		3.7		3.8	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	--	-	--	-	--	-	--	-	*	0
...COELASTRACEAE										
....COELASTRUM	--	-	--	-	--	-	--	-	2100	1
...HYDRODICTYACEAE										
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE										
....GOLENKINIA	--	-	--	-	--	-	--	-	1600	1
....MICRACTINIUM	--	-	*	0	4400	4	500	1	11000	7
...OOCYSTACEAE										
....ANKISTRODESMUS	--	-	2700	2	7800	8	1100	3	2100	1
....CHLORELLA	--	-	--	-	78000#	77	--	-	2100	1
....CHODATELLA	--	-	*	0	--	-	--	-	2600	2
....CLOSTERIOPSIS	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	14000	10	--	-	4500	11	4200	3
....GLOEOACTINIUM	--	-	--	-	--	-	1500	4	10000	7
....KIRCHNERIELLA	--	-	2700	2	2900	3	--	-	3100	2
....OOCYSTIS	230#	36	8900	6	3900	4	*	0	--	-
....SELENASTRUM	--	-	2400	2	--	-	*	0	3600	2
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	*	0	*	0
...SCENEDESMACEAE										
....ACTINASTRUM	--	-	2400	2	--	-	3000	7	17000	10
....CRUCIGENIA	--	-	--	-	--	-	2500	6	2100	1
....SCENEDESMUS	--	-	12000	9	--	-	5300	13	32000#	20
....TETRASTRUM	--	-	4100	3	--	-	3500	9	4200	3
..TETRASPORALES										
...COCCOMYXACEAE										
....ELAKATOTHRIX	57	9	--	-	--	-	--	-	--	-
...PALMELLACEAE										
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CARTERIA	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	*	0	1500	1	250	1	1600	1
...PHACOTACEAE										
....PHACOTUS	43	7	--	-	--	-	--	-	--	-
...POLYBLEPHARIDACEAE										
....SPERMATOZOOPSIS	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....STAURASTRUM	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	5500	4	970	1	3900	9	6800	4
....MELOSIRA	--	-	1700	1	--	-	6500#	16	6200	4
....STEPHANODISCUS	--	-	--	-	--	-	880	2	--	-
..PENNALES										
...DIATOMACEAE										
....DIATOMA	--	-	--	-	--	-	*	0	--	-
...FRAGILARIACEAE										
....SYNEDRA	--	-	--	-	--	-	250	1	--	-
...NAVICULACEAE										
....NAVICULA	--	-	--	-	--	-	*	0	3100	2
...NITZSCHIACEAE										
....NITZSCHIA	--	-	2700	2	--	-	1500	4	--	-
...SURIRELLACEAE										
....SURIRELLA	--	-	*	0	--	-	--	-	--	-
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...OCHROMONADACEAE										
....OCHROMONAS	--	-	1000	1	--	-	--	-	--	-
.XANTHOPHYCEAE										
..HETEROCOCCALES										
...CHLOROTHECIACEAE										
....OPHIOCYTIUM	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

PHYTOPLANKTON ANALYSES

DATE TIME	JUN 26,80 1100	JUL 24,80 0920	AUG 29,80 0900	SEP 26,80 0915
TOTAL CELLS/ML	180000	24000	35000	8000
DIVERSITY: DIVISION	1.2	1.6	1.3	1.6
.CLASS	1.2	1.6	1.3	1.6
..ORDER	1.6	2.2	2.2	2.2
...FAMILY	2.3	2.4	2.6	2.7
....GENUS	2.5	2.6	3.1	3.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT		
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	*	--	*	--	*	--	*	--	*
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	*	3100	2	--	*	--	*	--	*
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	--	-	220000	16	--	*	6000	19	--	*
....ANACYSTIS	2900	44	470000	36	--	*	--	*	6700	3
....COCCOCHLORIS	--	*	--	*	--	*	--	*	9	6
....GOMPHOSPHAERIA	--	*	--	*	--	*	--	*	--	*
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	*	--	*	--	*	--	*	--	*
....ANABAENOPSIS	--	*	--	*	--	*	--	*	--	*
...OSCILLATORIACEAE										
....OSCILLATORIA	--	*	--	*	--	*	--	*	910000	20
...RIVULARIACEAE										
....RAPHIDIOPSIS	--	*	--	*	--	*	5100	8	--	*
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...ASTASIACEAE										
....RHABDOMONAS	--	*	--	*	--	*	--	*	--	*
...EUGLENACEAE										
....EUGLENA	14	2	--	*	--	*	--	*	1000	1
....PHACUS	14	2	--	*	--	*	--	*	--	*
....TRACHELOMONAS	--	*	3800	3	2000	2	0	0	6200	3
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	*	--	*	--	*	--	*	--	*

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
      * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980 ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	1170	1130	1060	1650	1580	1600	1040	1240	1480	1610	1740
2	---	1180	1110	1100	1670	1630	1580	1040	1360	1480	1610	1780
3	---	1180	1130	1100	1670	1630	1580	1040	1360	1480	1620	1770
4	---	1170	1020	1160	1670	1630	1580	1040	1360	1460	1620	1790
5	---	1180	990	1150	1670	1630	1580	1040	1360	1460	1620	1780
6	---	1170	990	1100	1690	1670	1580	1040	1360	1460	1620	1780
7	---	1170	1000	1160	1720	1670	1700	1040	1360	1460	1620	1760
8	---	1280	1000	1160	1720	1650	1700	1040	1360	1460	1600	1760
9	1160	1270	1020	1160	1720	1660	1720	1170	1360	1460	1600	1760
10	1160	1270	1020	1160	1720	1650	1710	1160	1400	1470	1600	1850
11	1160	1270	1020	1160	1720	1650	1710	1170	1410	1470	1600	1850
12	1240	1270	1100	1220	1760	1650	1700	1170	1410	1500	1600	1850
13	1160	1280	1110	1220	1780	1650	1700	1170	1410	1500	1600	1850
14	1180	1260	1110	1220	1800	1520	1700	1170	1410	1500	1600	1850
15	1280	1280	1110	1220	1800	1520	1500	1160	1410	1500	1600	1850
16	1240	1080	1110	1230	1800	1520	1480	1180	1400	1500	1600	1850
17	1260	1080	1100	1220	1800	1520	1480	1240	1400	1500	1640	1850
18	1250	1070	1110	1230	1720	1520	1460	1240	1410	1500	1640	1900
19	1250	1070	1050	1230	1790	1520	1480	1240	1410	1500	1600	1900
20	1260	1070	1050	1240	1580	1530	1480	1240	1420	1550	1630	1900
21	1240	1070	1050	1240	1600	1520	1480	1240	1420	1550	1630	1900
22	1240	---	1050	1240	1600	1660	1480	1240	1420	1550	1630	1890
23	1240	---	1050	1230	1600	1660	1250	1240	1420	1550	1630	1890
24	1240	1060	1050	1240	1600	1660	1250	1240	1420	1550	1630	1890
25	1260	1190	1050	1230	1580	1660	1260	1280	1420	1550	1750	1900
26	1240	1200	1060	1240	1600	1660	1250	1260	1420	1570	1750	1940
27	1240	1220	1050	1240	1630	1660	1240	1280	1470	1560	1750	1950
28	1220	---	1060	1490	1600	1660	1250	1260	1470	1560	1750	1940
29	1240	1180	1050	1490	1630	1660	1250	1260	1470	1600	1750	1950
30	1240	1210	1060	1490	---	1730	1240	1260	1470	1610	1750	1950
31	1240	---	1060	1490	---	1730	---	1260	---	1610	1750	---
MEAN	1230	1180	1060	1230	1690	1620	1500	1180	1400	1510	1650	1850

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980 ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.0	7.0	3.0	2.0	1.0	2.0	7.0	19.0	23.0	27.0	28.0	23.0
2	20.0	7.0	3.0	2.0	1.0	2.0	7.0	19.0	23.0	27.0	28.0	22.0
3	18.0	7.0	3.0	2.0	2.0	2.0	9.0	19.0	23.0	27.0	28.0	22.0
4	17.0	6.0	3.0	2.0	2.0	2.0	9.0	18.0	23.0	27.0	28.0	22.0
5	16.0	6.0	3.0	2.0	2.0	2.0	9.0	18.0	23.0	28.0	28.0	21.0
6	16.0	6.0	3.0	2.0	2.0	2.0	10.0	17.0	23.0	28.0	28.0	21.0
7	15.0	5.0	3.0	2.0	2.0	2.0	10.0	17.0	23.0	28.0	28.0	21.0
8	15.0	5.0	3.0	2.0	2.0	2.0	11.0	16.0	23.0	28.0	28.0	20.0
9	15.0	5.0	3.0	2.0	2.0	2.0	11.0	16.0	23.0	29.0	28.0	20.0
10	14.0	4.0	3.0	2.0	2.0	2.0	12.0	15.0	23.0	29.0	28.0	20.0
11	14.0	4.0	3.0	2.0	2.0	2.0	12.0	15.0	24.0	29.0	28.0	19.0
12	13.0	4.0	3.0	2.0	2.0	2.0	12.0	14.0	24.0	29.0	27.0	19.0
13	13.0	4.0	3.0	2.0	2.0	2.0	13.0	14.0	24.0	29.0	27.0	19.0
14	14.0	4.0	3.0	2.0	2.0	3.0	14.0	15.0	24.0	29.0	27.0	18.0
15	14.0	5.0	3.0	2.0	2.0	5.0	14.0	15.0	25.0	29.0	27.0	18.0
16	14.0	5.0	3.0	2.0	2.0	5.0	15.0	16.0	25.0	29.0	27.0	18.0
17	15.0	5.0	3.0	2.0	2.0	6.0	15.0	16.0	25.0	29.0	27.0	18.0
18	15.0	6.0	4.0	2.0	2.0	6.0	16.0	18.0	25.0	29.0	27.0	18.0
19	14.0	6.0	4.0	2.0	2.0	7.0	16.0	19.0	25.0	29.0	27.0	18.0
20	14.0	6.0	4.0	2.0	2.0	7.0	16.0	20.0	25.0	29.0	27.0	18.0
21	14.0	6.0	4.0	2.0	2.0	7.0	16.0	20.0	26.0	29.0	27.0	18.0
22	12.0	---	4.0	2.0	2.0	6.0	16.0	22.0	26.0	29.0	27.0	18.0
23	12.0	---	3.0	2.0	2.0	6.0	17.0	22.0	26.0	29.0	27.0	19.0
24	12.0	4.0	3.0	2.0	2.0	6.0	17.0	22.0	26.0	29.0	25.0	19.0
25	11.0	4.0	3.0	2.0	2.0	6.0	18.0	22.0	26.0	29.0	25.0	19.0
26	11.0	3.0	3.0	2.0	2.0	6.0	18.0	22.0	26.0	28.0	24.0	19.0
27	10.0	3.0	3.0	1.0	2.0	6.0	19.0	23.0	26.0	28.0	24.0	19.0
28	10.0	---	3.0	1.0	2.0	6.0	19.0	23.0	26.0	28.0	---	19.0
29	10.0	3.0	2.0	1.0	2.0	6.0	19.0	23.0	26.0	28.0	23.0	19.0
30	9.0	3.0	2.0	1.0	---	6.0	19.0	23.0	26.0	28.0	23.0	19.0
31	9.0	---	2.0	1.0	---	6.0	---	23.0	---	28.0	23.0	---
MEAN	14.0	5.0	3.0	2.0	2.0	4.5	14.0	18.5	24.5	28.5	26.5	19.5

06478515 MISSOURI RIVER NEAR GAYVILLE, SD

WATER-QUALITY RECORDS

LOCATION.--Lat 42°51'01", long 97°13'12", in SW¼NW¼ sec.27, T.93 N., R.54 W., Yankton County, Hydrologic Unit 10170101, 3.8 mi (6.1 km) southwest of Gayville, 4.1 mi (6.6 km) downstream from James River and at mile 796.0 (1,280.8 km).

PERIOD OF DAILY RECORD.--
STAGE: October 1969 to current year.

PERIOD OF RECORD.--
SUSPENDED SEDIMENT: October 1979 to September 1980.
BED MATERIAL: October 1979 to September 1980.

GAGE.--Water-stage recorder. Datum of gage is 1,100.00 ft (335.280 m) National Geodetic Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Flow regulated by Lewis and Clark Lake 15.0 mi (24.1 km) upstream (see station 06467000). Gage heights only in files of Corps of Engineers for period of October 1969 to September 1980. Samples collected 8.5 mi (13.7 km) downstream from gage. Several water-discharge measurements, and observations of water temperature and specific conductance were made during the year.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	SAMP-LING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
OCT												
16...	1220	220	2.3	10.0	3.68	152	29	29	50	93	100	--
16...	1223	220	5.0	10.0	3.70	166	26	26	42	99	100	--
16...	1226	220	7.1	10.0	3.67	295	18	18	41	100	--	--
16...	1229	220	8.3	10.0	2.95	171	36	36	49	100	--	--
16...	1232	220	9.0	10.0	2.52	315	12	12	27	100	--	--
16...	1235	380	2.3	9.80	3.63	67	48	--	--	--	--	--
16...	1238	380	4.9	9.80	3.47	116	39	39	62	100	--	--
16...	1241	380	7.0	9.80	2.82	126	34	40	56	99	100	--
16...	1244	380	8.2	9.80	2.30	252	25	25	40	78	100	--
16...	1247	380	8.6	9.80	2.40	241	2	21	36	76	100	--
16...	1250	660	1.9	8.00	3.42	196	18	19	40	83	100	--
16...	1253	660	4.0	8.00	3.36	58	18	21	61	100	--	--
16...	1256	660	5.7	8.00	3.10	88	18	--	--	--	--	--
16...	1259	660	6.7	8.00	2.72	176	18	18	44	95	100	--
16...	1302	660	7.2	8.00	2.72	201	18	18	39	92	100	--
16...	1305	840	4.1	17.9	4.20	94	58	--	--	--	--	--
16...	1308	840	8.9	17.9	3.94	76	51	--	--	--	--	--
16...	1311	840	12	17.9	3.55	116	37	--	--	--	--	--
16...	1314	840	14	17.9	2.70	172	29	32	50	100	--	--
16...	1317	840	16	17.9	2.09	309	15	15	33	92	100	--
16...	1320	840	16	17.9	1.07	351	11	12	32	86	100	--
16...	1323	930	5.1	22.2	4.30	63	71	--	--	--	--	--
16...	1326	930	11	22.2	3.91	78	74	--	--	--	--	--
16...	1329	930	15	22.2	3.37	97	72	--	--	--	--	--
16...	1332	930	18	22.2	3.37	90	55	--	--	--	--	--
16...	1333	930	20	22.2	2.90	129	47	--	--	--	--	--
16...	1336	930	20	22.2	2.55	169	32	32	58	78	100	--
16...	1339	930	21	22.2	2.50	204	25	26	42	65	100	--
16...	1342	1020	3.8	16.4	3.33	76	74	--	--	--	--	--
16...	1345	1020	8.2	16.4	3.11	66	74	--	--	--	--	--
16...	1348	1020	11	16.4	2.74	73	71	--	--	--	--	--
16...	1351	1020	13	16.4	2.35	87	76	--	--	--	--	--
16...	1354	1020	14	16.4	1.79	97	73	--	--	--	--	--
16...	1357	1020	15	16.4	1.70	102	72	--	--	--	--	--

06478515 MISSOURI RIVER NEAR GAYVILLE, SD--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	SAMP-LING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
APR												
22...	1330	170	3.4	14.6	4.29	58	63	--	--	--	--	--
22...	1335	170	7.5	14.6	3.90	33	59	60	71	100	--	--
22...	1340	170	10	14.6	3.38	49	40	40	47	100	--	--
22...	1344	170	12	14.6	2.85	63	36	39	47	94	100	--
22...	1352	170	13	14.6	2.79	90	22	23	32	60	100	--
22...	1357	170	13	14.6	2.55	143	14	15	22	60	100	--
22...	1406	310	4.6	9.00	3.12	54	40	44	65	96	100	--
22...	1410	310	6.6	9.00	2.77	85	34	40	46	95	100	--
22...	1415	310	7.7	9.00	2.53	103	22	31	46	84	95	100
22...	1419	310	8.1	9.00	2.53	143	15	21	31	90	100	--
22...	1424	740	1.2	5.30	3.44	60	36	48	66	89	100	--
22...	1428	740	2.6	5.30	3.22	52	36	42	61	82	100	--
22...	1433	740	3.5	5.30	2.88	85	36	48	61	87	100	--
22...	1437	740	4.0	5.30	2.83	87	36	42	48	83	98	100
22...	1442	740	4.3	5.30	3.07	84	36	37	47	81	100	--
22...	1446	880	3.6	15.4	4.45	56	68	76	91	96	100	--
22...	1451	880	7.7	15.4	4.12	64	61	62	74	100	--	--
22...	1455	880	11	15.4	3.57	47	45	53	63	87	100	--
22...	1500	880	12	15.4	3.33	99	19	22	36	84	100	--
22...	1504	880	13	15.4	2.68	134	14	18	31	76	100	--
22...	1509	880	14	15.4	2.55	149	12	17	33	91	100	--
22...	1513	975	4.9	21.0	4.23	41	48	70	84	94	100	--
22...	1518	975	10	21.0	3.66	41	48	51	73	95	100	--
22...	1522	975	15	21.0	3.22	58	39	50	65	86	100	--
22...	1527	975	17	21.0	3.03	71	31	36	61	92	100	--
22...	1531	975	18	21.0	2.43	78	26	26	41	93	100	--
22...	1536	975	19	21.0	2.27	106	24	29	38	73	97	100
22...	1540	975	20	21.0	2.42	113	24	27	41	84	100	--
JUN												
03...	1245	100	3.7	16.1	3.64	45	88	81	96	100	--	--
03...	1253	100	8.0	16.1	3.33	51	80	82	98	100	--	--
03...	1301	100	11	16.1	3.07	55	69	69	94	100	--	--
03...	1309	100	13	16.1	2.88	60	68	68	87	100	--	--
03...	1317	100	14	16.1	2.64	66	65	66	74	100	--	--
03...	1325	100	15	16.1	2.42	103	43	44	60	100	--	--
03...	1333	320	1.3	5.60	2.92	81	69	69	82	100	--	--
03...	1341	320	2.8	5.60	2.44	73	61	61	68	100	--	--
03...	1349	320	3.7	5.60	2.59	94	47	50	66	100	--	--
03...	1357	320	4.3	5.60	2.46	137	30	34	46	97	100	--
03...	1405	320	4.7	5.60	2.33	135	31	33	48	97	100	--
03...	1413	660	1.6	6.90	3.46	72	60	61	92	100	--	--
03...	1421	660	3.4	6.90	3.16	60	64	68	80	100	--	--
03...	1429	660	4.9	6.90	2.92	65	60	60	69	100	--	--
03...	1436	660	5.7	6.90	2.61	68	61	61	76	100	--	--
03...	1444	660	6.1	3.90	2.29	93	54	55	65	100	--	--
03...	1452	860	3.0	12.8	4.51	72	72	73	89	100	--	--
03...	1500	860	6.4	12.8	3.99	72	54	55	68	100	--	--
03...	1508	860	9.1	12.8	3.75	107	45	47	56	100	--	--
03...	1516	860	10	12.8	3.20	100	41	44	57	92	100	--
03...	1524	860	11	12.8	3.35	158	25	27	35	78	100	--
03...	1532	860	12	12.8	2.85	149	28	33	45	85	100	--
03...	1540	960	3.5	15.3	3.66	74	74	74	84	100	--	--
03...	1548	960	7.6	15.3	3.64	13	74	--	--	--	--	--
03...	1556	960	10	15.3	2.98	50	74	80	88	93	100	--
03...	1604	960	12	15.3	2.51	62	74	74	90	100	--	--
03...	1612	960	13	15.3	1.92	50	74	74	95	100	--	--
03...	1620	960	14	15.3	1.74	91	74	74	85	100	--	--

06478515 MISSOURI RIVER NEAR GAYVILLE, SD--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	SAMPLING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOCATION, TOTAL (FEET) (81903)	STREAM VELOCITY, POINT (FPS) (81904)	SEDIMENT, SUSPENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
JUL												
15...	1110	150	2.5	10.6	4.29	49	71	97	98	100	--	--
15...	1113	150	5.3	10.6	3.94	50	65	84	89	99	100	--
15...	1117	150	7.6	10.6	3.57	96	36	56	63	82	100	--
15...	1121	150	8.8	10.6	3.14	107	33	55	59	71	100	--
15...	1125	150	9.5	10.6	2.48	130	27	42	47	69	100	--
15...	1128	300	2.3	9.80	3.68	40	77	92	96	100	--	--
15...	1132	30	4.9	9.80	3.14	49	56	71	82	100	--	--
15...	1136	300	7.0	9.80	2.83	60	45	54	63	90	100	--
15...	1139	300	8.2	9.80	2.64	82	37	54	64	91	100	--
15...	1143	300	8.8	9.80	2.37	88	33	44	54	85	100	--
15...	1147	580	1.8	7.60	3.53	40	38	58	73	100	--	--
15...	1150	580	3.8	7.60	3.25	64	38	54	66	99	100	--
15...	1154	580	5.4	7.60	2.94	82	38	45	50	99	100	--
15...	1157	580	6.3	7.60	2.75	164	38	45	60	89	100	--
15...	1201	580	6.8	7.60	2.46	186	38	40	48	88	100	--
15...	1205	780	3.1	13.2	4.69	50	61	62	75	100	--	--
15...	1208	780	6.6	13.2	4.29	58	44	61	75	98	100	--
15...	1212	780	9.4	13.2	3.51	85	31	45	55	93	100	--
15...	1216	780	11	13.2	3.12	123	20	32	41	77	100	--
15...	1219	780	11	13.2	2.77	166	15	19	27	65	100	--
15...	1223	780	12	13.2	2.75	188	13	15	20	53	98	100
15...	1227	880	3.1	13.7	5.16	51	49	63	83	100	--	--
15...	1230	880	6.8	13.7	4.71	75	38	39	50	100	--	--
15...	1234	880	9.7	13.7	4.23	96	27	34	43	94	100	--
15...	1238	880	11	13.7	4.12	151	17	18	28	75	100	--
15...	1241	880	12	13.7	3.44	166	16	23	40	87	100	--
15...	1245	880	12	13.7	3.29	241	12	18	28	73	100	--
AUG												
19...	1210	140	2.7	11.8	3.77	26	46	60	70	100	--	--
19...	1213	140	5.9	11.8	3.57	54	46	47	63	100	--	--
19...	1216	140	8.4	11.8	3.27	79	46	47	60	100	--	--
19...	1219	140	9.8	11.8	2.57	91	46	50	55	100	--	--
19...	1222	140	10	11.8	2.61	93	46	55	66	97	100	--
19...	1225	380	1.2	5.30	2.68	14	50	80	92	100	--	--
19...	1228	380	2.6	5.30	2.68	47	16	39	50	100	--	--
19...	1232	380	3.5	5.30	2.20	20	33	54	71	100	--	--
19...	1235	380	4.1	5.30	2.11	35	40	51	61	95	100	--
19...	1238	380	4.4	5.30	2.07	26	75	78	83	100	--	--
19...	1241	700	2.4	10.3	4.18	28	50	53	76	100	--	--
19...	1244	700	5.1	10.3	3.88	47	50	68	79	96	100	--
19...	1247	700	7.3	10.3	3.53	71	22	41	61	98	100	--
19...	1250	700	8.5	10.3	2.96	57	42	49	59	78	100	--
19...	1253	700	9.3	10.3	2.63	55	28	36	50	80	100	--
19...	1256	830	3.0	12.9	4.77	24	33	42	63	100	--	--
19...	1259	830	6.4	12.9	4.45	33	25	40	63	100	--	--
19...	1302	830	9.2	12.9	3.90	85	16	32	58	94	100	--
19...	1305	830	10	12.9	3.51	70	10	25	45	89	100	--
19...	1308	830	11	12.9	3.22	100	7	11	28	73	100	--
19...	1311	830	12	12.9	2.75	147	14	24	37	69	100	--
19...	1315	950	3.6	15.7	4.77	23	66	71	90	100	--	--
19...	1318	950	7.8	15.7	4.34	34	40	51	82	100	--	--
19...	1321	950	11	15.7	4.07	28	25	40	58	100	--	--
19...	1324	950	13	15.7	3.53	58	25	32	52	95	100	--
19...	1327	950	14	15.7	3.09	89	25	46	57	86	97	100
19...	1330	950	14	15.7	2.92	109	14	35	46	69	100	--

06478515 MISSOURI RIVER NEAR GAYVILLE, SD--Continued

PARTICLE-SIZE OF BED MATERIAL, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT												
16...	1405	930	--	0	6	65	94	96	98	--	100	--
16...	1410	840	--	0	14	51	82	86	90	95	98	100
16...	1415	660	--	0	10	64	95	98	99	--	100	--
16...	1420	380	--	0	25	89	97	--	--	100	--	--
16...	1425	220	--	0	31	91	100	100	--	--	--	--
APR												
22...	1545	170	0	0	20	81	97	99	99	99	100	--
22...	1550	310	0	0	17	70	92	93	96	98	99	100
22...	1555	740	0	0	7	61	92	92	96	98	99	100
22...	1600	880	0	0	5	32	82	85	93	98	99	100
JUN												
03...	1625	100	0	0	17	92	96	98	99	99	100	--
03...	1630	320	0	0	40	96	100	99	99	99	100	--
03...	1635	660	0	0	8	47	78	80	87	95	98	100
03...	1640	860	0	0	7	36	72	75	87	95	98	100
JUL												
15...	1250	150	--	0	9	90	100	99	99	100	100	--
15...	1255	300	--	0	13	87	98	99	100	--	--	--
15...	1300	580	--	0	16	68	89	88	91	94	97	100
15...	1305	780	--	0	3	28	59	61	73	89	96	100
15...	1310	880	--	0	3	25	75	82	91	97	99	100
AUG												
19...	1335	140	--	0	8	82	99	99	99	99	100	--
19...	1340	380	--	0	23	93	100	99	99	99	100	--
19...	1345	700	--	0	6	59	94	95	96	99	100	--
19...	1350	830	--	0	4	28	65	64	74	89	98	100

06478526 MISSOURI RIVER NEAR MASKELL, NE

WATER-QUALITY RECORDS

LOCATION.--Lat 42°43'02", long 96°57'20", in NW¼SW¼ sec.27, T.32 N., R.4 E., Dixon County, Hydrologic Unit 10170101, 2.3 mi (3.7 km) northeast of Maskell, 24.3 mi (39.1 km) downstream from James River, 3.8 mi (6.1 km) upstream from Vermillion River and at mile 775.8 (1,248.3 km).

PERIOD OF DAILY RECORD.--
STAGE: September 1967 to current year.

PERIOD OF RECORD.--
SUSPENDED SEDIMENT: October 1979 to September 1980.
BED MATERIAL: October 1979 to September 1980.

GAGE.--Water-stage recorder. Datum of gage is 1,100.00 ft (335.280 m) National Geodetic Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Flow regulated by Lewis and Clark Lake 33.2 mi (56.6 km) upstream (see station 06467000). Gage heights only in files of Corps of Engineers for period September 1967 to September 1980. Several water-discharge measurements, and observations of water temperature and specific conductance were made during the year.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) (00009)	SAMP- LING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET) (81903)	STREAM VELOC- ITY, POINT (FPS) (81904)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
OCT												
17...	1250	280	1.6	7.10	4.20	218	19	19	37	96	100	--
17...	1256	280	5.0	7.10	3.48	439	10	10	17	88	100	--
17...	1259	280	5.9	7.10	3.28	924	4	4	9	74	100	--
17...	1302	280	6.4	7.10	--	660	7	7	12	84	100	--
17...	1305	470	3.1	13.6	5.28	221	18	18	35	94	100	--
17...	1308	470	6.8	13.6	4.70	299	16	16	25	80	100	--
17...	1311	470	9.7	13.6	4.70	391	18	18	22	76	100	--
17...	1314	470	11	13.6	4.39	430	9	9	18	79	100	--
17...	1317	470	12	13.6	4.32	832	5	5	10	69	100	--
17...	1320	470	12	13.6	4.46	858	5	5	8	73	100	--
17...	1324	560	4.1	17.7	5.56	79	10	10	47	94	100	--
17...	1328	560	8.8	17.7	5.19	127	10	10	31	66	100	--
17...	1332	560	12	17.7	4.70	229	10	10	28	60	100	--
17...	1336	560	14	17.7	4.20	365	10	13	27	52	100	--
17...	1340	560	15	17.7	4.04	455	10	11	32	60	100	--
17...	1344	560	16	17.7	3.94	512	10	11	18	46	100	--
17...	1347	660	3.7	16.3	6.24	76	62	--	--	--	--	--
17...	1350	660	8.1	16.3	5.35	77	63	--	--	--	--	--
17...	1354	660	11	16.3	4.09	100	50	--	--	--	--	--
17...	1358	660	13	16.3	2.70	113	46	46	75	99	100	--
17...	1402	660	14	16.3	1.92	124	34	34	57	92	100	--
17...	1406	660	15	16.3	1.35	173	23	23	46	86	100	--
17...	1410	770	2.6	11.4	6.89	61	84	--	--	--	--	--
17...	1414	770	5.7	11.4	6.17	190	24	--	--	--	--	--
17...	1418	770	8.1	11.4	5.74	64	78	--	--	--	--	--
17...	1422	770	9.5	11.4	4.46	73	77	--	--	--	--	--
17...	1426	770	10	11.4	4.07	68	77	--	--	--	--	--
17...	1553	280	3.5	7.10	4.07	360	12	12	22	82	100	--

06478526 MISSOURI RIVER NEAR MASKELL, NE--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) (00009)	SAMP- LING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET) (81903)	STREAM VELOC- ITY, POINT (FPS) (81904)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
APR												
23...	1300	280	2.1	9.30	3.77	96	45	45	68	100	--	--
23...	1304	280	4.6	9.30	3.62	114	25	28	47	81	100	--
23...	1309	280	6.6	9.30	3.03	160	18	22	42	83	100	--
23...	1313	280	7.7	9.30	2.51	207	14	19	36	77	100	--
23...	1318	280	8.3	9.30	2.53	252	12	16	31	62	91	100
23...	1322	400	3.8	16.7	5.47	112	22	27	51	98	100	--
23...	1327	400	8.3	16.7	5.03	187	12	19	32	81	100	--
23...	1331	400	11	16.7	4.71	220	11	11	23	76	100	--
23...	1336	400	13	16.7	4.12	279	9	10	18	58	98	100
23...	1340	400	14	16.7	3.99	550	5	5	11	50	93	100
23...	1344	400	15	16.7	4.16	622	4	6	14	50	94	100
23...	1349	465	4.5	19.7	6.12	62	21	37	70	93	100	--
23...	1353	465	9.8	19.7	6.02	67	21	31	57	98	100	--
23...	1358	465	14	19.7	5.21	82	21	29	55	100	--	--
23...	1402	465	16	19.7	4.66	124	21	29	50	91	100	--
23...	1407	465	17	19.7	4.18	190	21	28	42	71	100	--
23...	1411	465	18	19.7	3.99	240	21	26	37	59	99	100
23...	1416	510	3.4	14.8	6.17	60	49	76	89	100	--	--
23...	1420	510	7.4	14.8	5.21	72	35	36	65	95	100	--
23...	1424	510	10	14.8	3.88	92	29	32	57	98	100	--
23...	1429	510	12	14.8	3.29	118	24	40	59	91	100	--
23...	1433	510	13	14.8	2.46	129	20	20	39	81	100	--
23...	1438	510	13	14.8	2.66	134	19	24	61	86	100	--
23...	1442	605	2.6	11.5	6.15	65	43	52	72	97	100	--
23...	1447	605	5.7	11.5	5.38	149	21	24	44	100	--	--
23...	1451	605	8.1	11.5	5.14	189	16	17	28	97	100	--
23...	1456	605	9.5	11.5	4.53	220	15	19	34	95	100	--
23...	1500	605	10	11.5	3.83	342	9	9	19	85	100	--
JUN												
04...	1000	320	2.0	8.90	3.64	165	33	36	65	100	--	--
04...	1013	320	4.4	8.90	3.18	273	19	21	47	100	--	--
04...	1027	320	6.3	8.90	2.85	472	9	11	30	100	--	--
04...	1040	320	7.3	8.90	2.51	821	6	6	19	87	100	--
04...	1053	320	7.9	8.90	1.89	661	8	8	29	95	100	--
04...	1107	440	3.7	16.1	5.03	124	40	40	62	97	100	--
04...	1120	440	8.0	16.1	4.64	154	32	33	47	91	100	--
04...	1133	440	11	16.1	4.07	300	14	20	32	89	100	--
04...	1200	440	14	16.1	3.14	384	13	16	27	83	100	--
04...	1213	440	15	16.1	2.92	602	8	9	14	81	100	--
04...	1227	505	4.0	17.5	5.40	97	54	54	73	100	--	--
04...	1240	505	8.7	17.5	4.95	95	53	53	69	95	100	--
04...	1253	505	12	17.5	4.14	178	31	31	48	69	100	--
04...	1307	505	14	17.5	3.86	191	23	23	33	60	100	--
04...	1320	505	15	17.5	3.20	263	15	15	24	50	100	--
04...	1333	505	.1	17.5	3.29	289	15	16	23	51	99	100
04...	1347	580	3.4	14.9	5.71	102	43	48	74	90	100	--
04...	1400	580	7.4	14.9	5.03	82	65	69	90	100	--	--
04...	1413	580	10	14.9	4.05	78	51	58	77	100	--	--
04...	1427	580	12	14.9	1.07	94	42	43	67	95	100	--
04...	1440	580	13	14.9	.87	99	47	47	58	92	100	--
04...	1447	440	15	16.1	3.36	315	14	14	25	88	100	--
04...	1453	580	13	14.9	1.37	115	42	48	66	92	100	--
04...	1506	680	2.5	10.7	5.81	42	51	51	87	100	--	--
04...	1520	680	5.3	10.7	5.21	42	51	51	72	100	--	--
04...	1533	680	7.6	10.7	4.73	73	50	65	76	100	--	--
04...	1547	680	8.8	10.7	4.14	104	50	51	70	99	100	--
04...	1600	680	9.5	10.7	3.70	138	51	57	72	97	100	--

06478526 MISSOURI RIVER NEAR MASKELL, NE--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	SAMP-LING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
JUL												
16...	1130	400	3.1	13.7	4.12	86	45	65	74	96	100	--
16...	1134	400	6.8	13.7	3.75	159	26	38	48	95	100	--
16...	1138	400	9.7	13.7	3.27	281	14	31	36	92	100	--
16...	1142	400	11	13.7	3.07	373	11	16	29	89	100	--
16...	1155	480	5.0	21.8	5.84	102	40	60	73	99	100	--
16...	1159	480	10	21.8	4.82	218	20	39	53	74	100	--
16...	1203	480	15	21.8	3.12	402	9	15	26	57	100	--
16...	1207	480	18	21.8	2.61	598	7	70	18	62	100	--
16...	1211	480	19	21.8	2.29	1620	2	2	4	24	98	100
16...	1216	480	20	21.8	2.22	3110	1	2	2	34	99	100
16...	1220	480	21	21.8	1.37	999	4	5	9	28	99	100
16...	1224	560	4.7	20.4	6.45	58	46	71	86	100	--	--
16...	1228	560	10	20.4	6.15	29	46	57	75	100	--	--
16...	1232	560	14	20.4	5.82	62	46	64	83	98	100	--
16...	1236	560	17	20.4	5.14	107	46	64	70	84	100	--
16...	1240	560	18	20.4	4.10	167	46	52	61	72	94	100
16...	1244	560	19	20.4	3.75	209	46	52	61	70	97	100
16...	1249	620	4.1	17.7	6.41	49	65	75	85	100	--	--
16...	1253	620	8.8	17.7	5.86	59	60	74	85	96	100	--
16...	1257	620	12	17.7	4.10	83	45	48	72	94	100	--
16...	1300	620	14	17.7	3.03	103	35	56	73	98	100	--
16...	1305	620	15	17.7	2.18	115	31	41	53	92	100	--
16...	1309	620	16	17.7	1.45	128	26	54	65	90	100	--
16...	1313	710	2.8	12.2	6.84	76	74	90	98	100	--	--
16...	1318	710	6.1	12.2	5.75	70	65	92	99	100	--	--
16...	1322	710	8.7	12.2	5.25	77	64	83	91	100	--	--
16...	1326	710	10	12.2	4.77	79	65	80	90	100	--	--
16...	1330	710	11	12.2	4.73	110	48	75	85	98	100	--
AUG												
20...	1300	340	2.8	12.0	4.25	83	9	13	35	95	100	--
20...	1303	340	6.0	12.0	3.70	170	9	11	30	91	100	--
20...	1305	340	8.6	12.0	3.33	236	9	11	28	93	100	--
20...	1308	340	10	12.0	3.09	333	9	11	24	90	100	--
20...	1310	340	10	12.0	2.96	488	9	10	19	87	100	--
20...	1313	420	4.1	17.7	5.08	70	31	40	61	100	--	--
20...	1316	420	8.8	17.7	5.10	90	28	31	44	100	--	--
20...	1318	420	12	17.7	4.14	149	15	22	36	68	100	--
20...	1321	420	14	17.7	4.18	178	16	19	29	67	100	--
20...	1323	420	15	17.7	3.68	236	9	11	22	62	100	--
20...	1326	420	16	17.7	3.31	240	9	11	22	62	100	--
20...	1329	500	4.3	18.9	5.34	54	44	52	73	95	100	--
20...	1331	500	9.4	18.9	4.73	60	37	43	60	95	100	--
20...	1334	500	13	18.9	4.75	65	32	--	--	--	--	--
20...	1336	500	15	18.9	4.29	123	24	33	41	63	96	100
20...	1339	500	17	18.9	3.96	187	11	14	23	40	100	--
20...	1341	500	17	18.9	4.14	395	6	8	13	25	94	100
20...	1344	560	4.8	20.7	5.91	42	53	73	100	--	--	--
20...	1347	560	10	20.7	4.49	48	58	72	84	94	100	--
20...	1349	560	14	20.7	3.60	58	40	46	81	100	--	--
20...	1352	560	17	20.7	2.85	59	48	64	76	95	100	--
20...	1354	560	18	20.7	2.22	530	41	57	71	97	100	--
20...	1357	560	19	20.7	1.89	75	38	44	65	96	100	--
20...	1400	640	2.8	12.0	5.82	46	67	70	77	90	100	--
20...	1402	640	6.0	12.0	5.54	42	64	76	89	96	100	--
20...	1405	640	8.6	12.0	4.97	52	58	71	89	100	--	--
20...	1407	640	10	12.0	4.55	66	59	76	91	100	--	--
20...	1410	640	10	12.0	3.94	56	55	70	86	100	--	--

06478526 MISSOURI RIVER NEAR MASKELL, NE--Continued

PARTICLE-SIZE OF BED MATERIAL, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT												
17...	1440	280	0	1	64	97	100	100	--	--	--	--
17...	1445	470	--	0	8	59	93	96	99	--	--	100
17...	1450	560	--	0	3	74	99	--	--	--	100	--
17...	1455	660	1	40	14	18	24	25	32	50	74	91
17...	1500	770	--	0	9	76	100	100	--	--	--	--
APR												
23...	1505	280	0	0	14	92	--	100	--	--	--	--
23...	1510	400	0	1	16	91	100	0	0	0	0	--
23...	1515	465	0	0	2	32	73	73	84	93	98	100
23...	1520	510	21	38	67	97	--	99	99	99	99	--
23...	1525	605	5	26	60	92	97	99	99	99	--	--
JUN												
04...	1610	440	0	1	32	97	100	--	--	--	--	--
04...	1615	505	0	0	5	47	92	95	97	97	98	98
04...	1625	680	0	0	10	75	98	98	99	100	--	--
JUL												
16...	1335	400	--	1	50	97	100	99	99	99	100	--
16...	1340	480	--	0	7	86	99	99	100	--	--	--
AUG												
20...	1415	340	--	0	22	92	100	100	--	--	--	--
20...	1420	420	--	0	18	95	100	--	--	--	--	--

06478540 LITTLE VERMILLION RIVER NEAR SALEM, SD
(Hydrologic bench-mark station)

LOCATION.--Lat 43°47'39", long 97°22'02", in SW¼ sec.19, T.104 N., R.54 W., McCook County, Hydrologic Unit 10170102, on right wingwall at downstream end of culvert on county highway, 2.0 mi (3.2 km) upstream from small left-bank tributary and 5.2 mi (8.4 km) northeast of Salem.

DRAINAGE AREA.--51.0 mi^2 (132 km^2), approximately.

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder and concrete dam.

REMARKS.--Records good. Two observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--14 years, 2.11 ft^3/s (0.060 m^3/s), 1,530 acre-ft/yr (1.89 hm^3/yr); median of yearly mean discharges, 1.3 ft^3/s (0.04 m^3/s), 940 acre-ft/yr (1.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 676 ft^3/s (19.1 m^3/s) Mar. 21, 1978, gage height, 7.79 ft (2.374 m); maximum gage height, 8.53 ft (2.600 m) Apr. 5, 1969 (backwater from ice); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3.0 ft^3/s (0.08 m^3/s) Mar. 16, gage height, 4.13 ft (1.259 m), no peak above base of 10 ft^3/s (0.28 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.28	.00	.00	.00	.00	.14	.20	.00	.00	.00	.00
2	.00	.21	.00	.00	.00	.00	.11	.18	.00	.00	.00	.00
3	.00	.17	.00	.00	.00	.00	.13	.17	.00	.00	.00	.00
4	.00	.13	.00	.00	.00	.00	.14	.12	.15	.00	.00	.00
5	.00	.10	.00	.00	.00	.00	.14	.11	.91	.00	.00	.00
6	.00	.05	.00	.00	.00	.00	.17	.08	.14	.00	.00	.00
7	.00	.03	.00	.00	.00	.00	.18	.04	.01	.00	.00	.00
8	.00	.02	.00	.00	.00	.00	.26	.01	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.67	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.91	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.83	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.75	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.01	.67	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.73	.67	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	2.8	.75	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	2.8	.83	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	2.0	.83	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	1.7	.91	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.91	.91	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.35	.83	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.35	.67	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.22	.53	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.12	.40	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.08	.35	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.06	.28	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.05	.28	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.05	.26	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.12	.22	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.24	.22	.00	.00	.00	.00	.00
31	.16	---	.00	.00	---	.19	---	.00	---	.00	.00	---
TOTAL	.16	.99	.00	.00	.00	12.78	15.04	.91	1.21	.00	.00	.00
MEAN	.005	.033	.000	.000	.000	.41	.50	.029	.040	.000	.000	.000
MAX	.16	.28	.00	.00	.00	2.8	1.0	.20	.91	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.11	.00	.00	.00	.00	.00
AC-FT	.3	2.0	.00	.00	.00	25	30	1.8	2.4	.00	.00	.00

CAL YR 1979 TOTAL 1332.60 MEAN 3.65 MAX 91 MIN .00 AC-FT 2640
WTR YR 1980 TOTAL 31.09 MEAN .085 MAX 2.8 MIN .00 AC-FT 62

06478690 WEST FORK VERMILLION RIVER NEAR PARKER, SD

LOCATION.--Lat 43°24'55", long 97°12'18", in NE¼NE¼ sec.10, T.99 N., R.54 W., Turner County, Hydrologic Unit 10170102, on left downstream wingwall of bridge, 3.7 mi (6.0 km) northwest of Parker and 13.9 mi (22.4 km) upstream from confluence with East Fork Vermillion River.

DRAINAGE AREA.--370 mi² (958 km²), approximately.

PERIOD OF RECORD.--August 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,340 ft (408 m), from topographic map. Prior to Oct. 11, 1973, nonrecording gage and crest-stage gage at same site and datum.

REMARKS.--Records fair except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--19 years, 21.1 ft³/s (0.598 m³/s), 15,290 acre-ft/yr (18.9 hm³/yr); median of yearly mean discharges, 8.6 ft³/s (0.24 m³/s), 6,200 acre-ft/yr (7.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,340 ft³/s (123 m³/s) Mar. 28, 1962, gage height, 12.33 ft (3.758 m); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 55 ft³/s (1.56 m³/s) at 1800 hours, Feb. 26, gage height, 3.65 ft (1.113 m), backwater from ice, no peak above base of 150 ft³/s (4.25 m³/s); no flow Sept. 28-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.93	.41	2.6	1.9	.85	14	5.6	2.0	1.2	.17	.01	.02
2	.80	.41	2.4	1.6	.87	15	5.6	1.9	1.0	.13	.01	.02
3	.80	.45	2.2	1.3	.87	31	7.6	1.8	1.2	.13	.01	.02
4	.74	.45	2.1	1.6	.87	20	9.2	1.7	1.0	.12	.01	.02
5	.68	.53	2.2	1.7	.86	14	9.0	1.6	1.2	.11	.01	.02
6	.68	.53	2.3	1.5	.86	12	8.6	1.4	1.2	.10	.01	.02
7	.63	.53	2.4	1.1	.82	15	8.3	1.3	1.2	.10	.01	.02
8	.49	.53	2.1	1.0	.76	30	9.2	1.2	1.2	.10	.02	.02
9	.49	.63	2.5	.90	.63	35	9.5	1.1	1.2	.10	.02	.02
10	.49	.63	2.8	.92	.52	25	9.0	1.0	1.0	.06	.01	.02
11	.37	.63	2.3	1.0	.47	8.0	9.5	1.1	.74	.08	.01	.02
12	.37	.80	2.5	1.1	.46	3.5	9.5	1.2	.68	.06	.01	.02
13	.37	.80	2.7	1.1	.45	2.0	8.9	1.0	.68	.06	.02	.02
14	.33	.93	2.5	1.2	.45	1.4	8.3	.86	.58	.05	.02	.02
15	.33	1.0	2.3	1.2	.45	2.5	7.8	1.0	.52	.04	.02	.02
16	.33	1.2	2.2	1.2	.43	4.5	7.1	1.2	.45	.02	.02	.02
17	.29	1.2	2.0	1.2	.41	6.8	6.6	1.4	.37	.02	.01	.02
18	.29	1.3	1.9	1.2	.39	7.3	6.4	1.2	.37	.04	.01	.02
19	.29	1.4	1.9	1.2	.45	5.2	5.9	1.1	.35	.06	.01	.02
20	.26	1.5	1.9	1.1	.70	6.8	5.7	1.2	.33	.06	.01	.02
21	.26	1.7	1.9	1.1	5.0	4.9	5.6	1.1	.31	.06	.01	.02
22	.26	1.8	2.0	1.1	32	4.2	5.2	1.2	.30	.02	.01	.01
23	.23	1.9	2.1	1.1	29	4.2	4.5	1.1	.30	.02	.01	.01
24	.23	2.0	2.0	1.1	21	4.2	4.0	1.2	.30	.04	.01	.01
25	.20	2.2	1.9	.96	19	4.0	4.0	1.2	.28	.02	.01	.01
26	.23	2.6	1.7	.83	40	4.0	3.8	1.1	.26	.02	.02	.01
27	.23	3.0	1.3	.72	30	4.5	3.1	1.1	.24	.02	.02	.01
28	.26	3.2	1.4	.70	25	4.2	2.5	1.0	.23	.01	.02	.00
29	.33	2.9	1.8	.73	21	5.2	2.0	1.0	.21	.01	.02	.00
30	.33	2.8	1.9	.77	---	5.3	2.0	1.8	.20	.02	.02	.00
31	.33	---	2.0	.81	---	5.4	---	1.4	---	.01	.02	---
TOTAL	12.85	39.96	65.8	34.94	234.57	309.1	194.0	39.46	19.10	1.86	.43	.48
MEAN	.41	1.33	2.12	1.13	8.09	9.97	6.47	1.27	.64	.060	.014	.016
MAX	.93	3.2	2.8	1.9	40	35	9.5	2.0	1.2	.17	.02	.02
MIN	.20	.41	1.3	.70	.39	1.4	2.0	.86	.20	.01	.01	.00
AC-FT	25	79	131	69	465	613	385	78	38	3.7	.9	1.0

CAL YR 1979 TOTAL 17181.77 MEAN 47.1 MAX 1830 MIN .20 AC-FT 34080
WTR YR 1980 TOTAL 952.55 MEAN 2.60 MAX 40 MIN .00 AC-FT 1890

06479000 VERMILLION RIVER NEAR WAKONDA, SD

LOCATION.--Lat 42°59'27", long 96°57'49", in SW¼NW¼ sec.2, T.94 N., R.52 W., Clay County, Hydrologic Unit 10170102, on left bank 40 ft (12 m) downstream from bridge on State Highway 19, 4.3 mi (6.9 km) downstream from Frog Creek, 7.4 mi (11.9 km) southeast of Wakonda, and 29.6 mi (47.6 km) upstream from mouth.

DRAINAGE AREA.--1,680 mi² (4,351 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,150.9 ft (350.79 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 2, 1954, nonrecording gage and crest-stage gage at site 40 ft (12 m) upstream at same datum. Since Dec. 27, 1951, supplementary nonrecording gage on relief bridge.

REMARKS.--Records fair October to March and good thereafter. At times during periods of high stage, part of flow leaves main channel through levee breaks and bypasses gage through overflow channel on left bank. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--35 years, 111 ft³/s (3.144 m³/s), 80,420 acre-ft/yr (99.2 hm³/yr); median of yearly mean discharges, 79 ft³/s (2.24 m³/s), 57,200 acre-ft/yr (71 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,880 ft³/s (280 m³/s) Apr. 8, 1969; maximum gage height, 17.17 ft (5.233 m) Apr. 6, 1969; no flow at times in 1951, 1956-59, 1975-77.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 281 ft³/s (7.96 m³/s) Apr. 5; maximum gage height, 7.85 ft (2.393 m) Feb. 22 (backwater from ice and beaver dam); no peak above base of 1,000 ft³/s (28.3 m³/s); minimum daily discharge, 1.0 ft³/s (0.03 m³/s) Aug. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	76	70	50	23	120	94	50	30	13	3.4	2.1
2	25	84	63	44	23	100	93	49	31	12	3.4	2.6
3	24	91	59	32	24	100	101	46	29	12	3.2	2.7
4	23	74	56	43	25	90	162	45	29	12	3.4	3.6
5	21	65	57	42	25	80	256	42	29	11	3.0	3.9
6	20	64	60	43	25	90	220	40	31	11	3.9	3.6
7	19	63	64	28	25	90	176	39	38	10	2.3	3.5
8	18	64	55	25	24	90	159	37	46	11	1.7	3.9
9	17	63	71	23	24	90	167	36	39	11	1.8	4.6
10	16	60	74	24	24	100	181	35	40	9.9	5.7	5.5
11	16	60	60	28	24	95	179	35	39	9.9	7.7	4.9
12	15	56	67	28	22	98	158	33	35	9.4	6.8	4.4
13	15	55	71	30	21	105	139	34	32	8.6	6.3	3.8
14	14	53	68	30	22	120	125	34	30	7.9	6.5	3.5
15	14	50	63	31	22	130	117	33	24	7.5	8.1	3.9
16	14	50	59	31	21	150	109	31	27	6.9	11	4.2
17	15	50	54	31	20	107	102	32	25	6.1	11	3.4
18	15	48	50	31	20	118	96	33	23	5.7	8.1	3.1
19	17	48	47	31	22	148	92	33	22	5.8	6.5	2.7
20	17	48	47	31	24	156	87	33	20	7.2	9.7	3.4
21	17	52	50	32	30	138	84	32	18	5.7	11	4.2
22	20	54	52	34	130	112	79	30	18	5.2	8.7	3.0
23	22	53	55	32	190	105	74	30	18	5.1	1.7	1.4
24	23	62	54	35	215	92	69	27	17	5.1	4.6	1.6
25	23	63	53	34	200	85	65	26	16	6.0	4.9	2.2
26	24	83	46	19	180	82	63	25	15	5.7	35	2.3
27	29	92	32	18	160	81	60	24	15	4.9	15	2.1
28	34	97	39	18	150	80	57	24	16	4.3	6.6	2.7
29	36	78	49	19	140	82	56	28	14	3.9	3.1	3.0
30	40	79	50	20	---	87	53	31	14	3.6	1.2	3.2
31	60	---	50	22	---	92	---	30	---	3.0	1.0	---
TOTAL	690	1935	1745	939	1855	3213	3473	1057	785	240.4	206.3	99.2
MEAN	22.3	64.5	56.3	30.3	64.0	104	116	34.1	26.2	7.75	6.65	3.31
MAX	60	97	74	50	215	156	256	50	46	13	35	5.5
MIN	14	48	32	18	20	60	53	24	14	3.0	1.0	1.4
AC-FT	1370	3840	3460	1860	3680	6370	6890	2100	1560	477	409	197

CAL YR 1979 TOTAL 87068.4 MEAN 239 MAX 4660 MIN 1.6 AC-FT 172700
WTR YR 1980 TOTAL 16237.9 MEAN 44.4 MAX 256 MIN 1.0 AC-FT 32210

06479098 MISSOURI RIVER NEAR PONCA, NE

WATER-QUALITY RECORDS

LOCATION.--Lat 42°34'32", long 96°41'01", in SE¼NE¼ sec.14, T.30 N., R.6 E., Dixon County, Hydrologic Unit 10170101, 1.5 mi (2.4 km) northeast of Ponca, 21 mi (33.8 km) downstream from Vermillion River, 16.8 mi (27.0 km) upstream from Big Sioux River and at mile 751.0 (1,208.4 km).

PERIOD OF DAILY RECORD.--
STAGE: May 1974 to current year.

PERIOD OF RECORD.--
SUSPENDED SEDIMENT: October 1979 to September 1980.
BED MATERIAL: October 1979 to September 1980.

GAGE.--Water-stage recorder. Datum of gage is 1,090.00 ft (332.232 m) National Geodetic Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Flow regulated by Lewis and Clark Lake 60.0 mi (96.5 km) upstream (see station 06467000). Gage heights only in files of Corps of Engineers for period May 1974 to September 1980. Several water-discharge measurements, and observations of water temperature and specific conductance were made during the year.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	SAMP-LING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
OCT												
18...	1200	200	2.4	10.2	4.15	282	39	43	63	92	100	--
18...	1203	200	5.1	10.2	3.85	267	41	44	64	91	100	--
18...	1206	200	7.3	10.2	3.46	374	24	30	50	76	100	--
18...	1209	200	8.5	10.2	3.20	463	29	33	57	82	100	--
18...	1212	200	9.2	10.2	3.07	396	24	29	57	80	100	--
18...	1215	360	2.5	11.1	4.52	212	36	36	81	100	--	--
18...	1218	360	5.5	11.1	4.59	285	30	31	50	97	100	--
18...	1221	360	7.9	11.1	3.94	358	22	22	49	81	100	--
18...	1224	360	9.2	11.1	3.87	573	17	19	40	70	100	--
18...	1227	360	10	11.1	3.85	602	12	13	32	68	100	--
18...	1230	490	3.3	14.4	5.26	102	15	15	56	92	100	--
18...	1233	490	7.2	14.4	4.74	206	15	17	65	100	--	--
18...	1236	490	10	14.4	4.09	401	15	23	54	90	100	--
18...	1239	490	12	14.4	3.81	447	15	18	49	89	100	--
18...	1242	490	13	14.4	3.69	512	15	16	37	88	100	--
18...	1245	490	13	14.4	3.78	780	15	16	28	75	100	--
18...	1248	610	4.5	19.4	5.28	217	41	44	65	99	100	--
18...	1251	610	9.7	19.4	4.50	206	44	44	65	100	--	--
18...	1254	610	1.3	19.4	3.78	435	20	23	40	77	100	--
18...	1257	610	16	19.4	2.96	821	8	8	20	62	100	--
18...	1300	610	17	19.4	3.11	974	8	9	20	63	100	--
18...	1303	610	18	19.4	1.90	923	6	9	20	60	100	--
18...	1306	710	4.9	21.2	3.87	97	63	--	--	--	--	--
18...	1309	710	10	21.2	3.18	101	66	--	--	--	--	--
18...	1312	710	15	21.2	2.87	104	42	--	--	--	--	--
18...	1315	710	17	21.2	2.72	108	67	--	--	--	--	--
18...	1318	710	19	21.2	2.63	112	66	--	--	--	--	--
18...	1321	710	20	21.2	2.33	116	66	--	--	--	--	--
18...	1324	710	20	21.2	2.09	120	61	--	--	--	--	--

06479438 MISSOURI RIVER NEAR PONCA, NE--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	SAMP-LING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
APR												
24...	1030	180	2.5	11.0	3.99	110	39	58	70	85	98	100
24...	1035	180	5.5	11.0	3.68	164	43	68	65	100	--	--
24...	1040	180	7.9	11.0	3.25	401	18	30	46	95	100	--
24...	1044	180	9.2	11.0	2.92	322	14	19	31	96	100	--
24...	1049	180	9.9	11.0	2.66	353	11	19	28	87	100	--
24...	1056	300	3.4	14.4	4.03	139	27	21	53	92	100	--
24...	1059	300	7.4	14.4	4.00	239	14	19	46	87	100	--
24...	1104	300	10	14.4	3.25	292	14	17	30	92	100	--
24...	1108	300	12	14.4	2.60	366	9	13	22	63	100	--
24...	1113	300	13	14.4	1.61	1480	4	9	9	41	100	--
24...	1118	440	2.9	12.4	4.05	168	43	37	59	89	100	--
24...	1123	440	6.2	12.4	3.84	121	43	44	67	96	100	--
24...	1128	440	8.9	12.4	3.42	187	43	42	65	94	100	--
24...	1132	440	10	12.4	3.22	177	43	31	51	87	100	--
24...	1137	440	11	12.4	2.92	227	43	33	46	74	100	--
24...	1142	560	2.4	11.5	4.07	90	36	46	65	91	100	--
24...	1147	560	5.7	11.5	3.79	139	45	38	57	81	100	--
24...	1152	560	8.1	11.5	3.25	197	15	40	61	69	100	--
24...	1156	560	9.5	11.5	2.77	292	11	19	35	74	100	--
24...	1201	560	10	11.5	.94	693	7	8	14	[illegible]	100	--
24...	1206	700	2.9	12.7	3.99	117	47	42	64	85	100	--
24...	1211	700	6.3	12.7	3.80	100	47	43	64	91	100	--
24...	1217	700	9.0	12.7	3.35	125	47	44	61	93	100	--
24...	1223	700	10	12.7	2.31	189	18	19	42	73	100	--
24...	1230	700	11	12.7	2.31	445	12	12	29	58	98	100
JUN												
05...	1107	190	7.0	9.90	3.29	155	39	[illegible]	[illegible]	[illegible]	100	--
05...	1130	190	2.3	9.90	3.94	63	[illegible]	[illegible]	[illegible]	100	--	--
05...	1133	190	4.9	9.90	3.53	116	[illegible]	[illegible]	[illegible]	[illegible]	100	--
05...	1140	190	8.2	9.90	2.94	206	[illegible]	[illegible]	[illegible]	[illegible]	100	--
05...	1144	190	8.4	9.90	2.44	191	[illegible]	[illegible]	[illegible]	[illegible]	100	--
05...	1147	340	2.3	10.9	4.10	138	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1151	340	5.4	10.9	3.42	175	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1154	340	7.7	10.9	3.01	147	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1156	340	9.0	10.9	3.05	204	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1201	340	9.7	10.9	2.81	232	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1203	500	2.8	14.1	3.97	128	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1208	500	6.0	14.1	3.40	106	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1212	500	8.5	14.1	3.31	163	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1215	500	10	14.1	2.65	200	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1218	500	10	14.1	2.11	366	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1222	630	3.1	13.5	4.14	129	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1225	630	6.7	13.5	3.75	130	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1229	630	9.6	13.5	3.94	178	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1232	630	11	13.5	3.81	420	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1236	630	12	13.5	2.90	296	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1239	630	12	13.5	2.90	297	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
05...	1243	760	3.1	13.5	4.05	61	[illegible]	[illegible]	[illegible]	[illegible]	--	--
05...	1246	760	6.7	13.5	3.81	58	[illegible]	[illegible]	[illegible]	[illegible]	--	--
05...	1250	760	9.6	13.5	3.00	76	[illegible]	[illegible]	[illegible]	[illegible]	--	--
05...	1253	760	11	13.5	3.07	191	[illegible]	[illegible]	[illegible]	[illegible]	100	--
05...	1257	760	12	13.5	2.94	237	[illegible]	[illegible]	[illegible]	[illegible]	--	--
05...	1300	760	12	13.5	2.96	566	[illegible]	[illegible]	[illegible]	[illegible]	100	--

06479098 MISSOURI RIVER NEAR PONCA, NE--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	SAMP-LING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
JUN.												
17...	1020	190	1.9	8.20	4.73	96	53	76	79	100	--	--
17...	1030	190	4.1	8.20	4.14	116	44	63	73	98	100	--
17...	1036	190	5.9	8.20	3.97	201	31	43	50	83	100	--
17...	1042	190	6.0	8.20	3.33	229	22	41	49	77	100	--
17...	1046	190	7.4	8.20	3.33	228	22	43	49	78	100	--
17...	1049	350	2.9	18.7	4.36	131	41	63	75	100	--	--
17...	1053	350	6.3	18.7	3.73	188	33	51	64	93	100	--
17...	1057	350	9.0	18.7	3.33	230	22	26	37	90	--	--
17...	1101	350	10	18.7	2.94	667	11	18	22	76	100	--
17...	1105	350	11	18.7	3.07	947	10	18	23	91	100	--
17...	1109	460	2.8	10.6	4.07	44	38	62	94	100	--	--
17...	1112	180	5.3	10.6	3.70	44	58	67	96	100	--	--
17...	1113	480	8.5	10.6	3.07	161	38	55	74	100	--	--
17...	1115	180	7.6	10.6	3.04	40	58	63	75	100	--	--
17...	1117	480	11	10.6	3.33	116	38	53	73	98	100	--
17...	1118	180	2.8	10.6	3.25	129	56	58	61	95	100	--
17...	1120	180	9.5	10.6	2.88	140	56	56	64	92	100	--
17...	1121	480	11	10.6	2.08	281	30	30	54	82	100	--
17...	1140	810	3.0	18.1	4.27	52	64	76	87	100	--	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

06479098 MISSOURI RIVER NEAR PONCA, NE--Continued

PARTICLE-SIZE OF BED MATERIAL, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT												
10...	1329	200	--	0	23	92	100	--	--	100	--	--
10...	1333	360	--	0	13	89	100	99	--	--	100	--
10...	1334	490	--	0	26	87	100	95	--	--	--	95
APR												
28...	1220	180	--	0	13	78	100	99	99	99	100	--
28...	1225	310	--	0	9	62	99	98	98	99	99	100
28...	1230	700	--	0	2	67	93	95	97	99	99	100
28...	1235	180	0	1	75	98	98	100	99	99	100	100
28...	1240	380	0	0	27	98	100	99	99	99	100	--
28...	1245	460	--	0	11	89	--	99	99	99	100	--
28...	1250	560	0	0	3	78	--	99	99	99	100	--
28...	1255	760	0	0	5	67	--	100	100	--	--	--
28...	1305	190	0	0	31	93	--	97	97	97	98	100
28...	1310	380	0	2	39	98	--	99	99	100	100	--
28...	1315	500	0	0	31	98	--	99	99	99	100	--
28...	1420	630	0	0	13	95	--	99	99	99	100	--
28...	1425	760	0	0	10	71	--	99	99	99	100	100
JUN												
05...	1305	190	0	0	31	93	--	97	97	97	98	100
05...	1310	380	0	2	39	98	--	99	99	100	100	--
05...	1315	500	0	0	31	98	--	99	99	99	100	--
05...	1420	630	0	0	13	95	--	99	99	99	100	--
05...	1425	760	0	0	10	71	--	99	99	99	100	100
JUL												
17...	1220	190	--	0	25	95	100	99	99	99	100	--
17...	1225	250	--	0	30	98	100	100	100	100	--	--
17...	1230	400	--	0	5	80	98	98	99	99	100	--
17...	1235	600	--	0	15	70	96	93	96	98	99	100
17...	1240	730	--	0	8	80	83	85	91	96	100	--
AUG												
21...	1220	180	--	0	13	78	100	99	99	99	100	--
21...	1225	310	--	0	9	62	99	98	98	99	99	100
21...	1230	660	--	0	2	67	93	95	97	99	99	100
21...	1235	560	--	0	3	68	98	98	98	99	100	--
21...	1240	720	--	0	6	75	100	99	99	100	100	--

06479438 BIG SIOUX RIVER NEAR WATERTOWN, SD

LOCATION.--Lat 45°00'22", long 97°09'53", in NE¼NE¼NE¼ sec.16, T.118 N., R.52 W., Codington County, Hydrologic Unit 10170202, on left bank at downstream side of county highway bridge, 4.9 mi (7.9 km) downstream from Mahoney Creek, 6.5 mi (10.5 km) upstream from inlet-outlet to Lake Kampeska, and 7.5 mi (12.1 km) northwest of Watertown.

DRAINAGE AREA.--241 mi² (624 km²), approximately.

PERIOD OF RECORD.--October 1972 to current year.

REVISED RECORDS.--WDR SD-78-1: 1973-74(M), 1976-77(M).

GAGE.--Water-stage recorder. Datum of gage is 1,725.81 ft (526.027 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--8 years, 21.9 ft³/s (0.620 m³/s), 15,870 acre-ft/yr (19.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,720 ft³/s (105 m³/s) Mar. 30, 1978, gage height, 11.07 ft (3.374 m); no flow at times in 1974-80.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 330 ft³/s (9.35 m³/s) at 1900 hours, Mar. 19, gage height, 8.04 ft (2.451 m), backwater from ice, no other peak above base of 300 ft³/s (8.50 m³/s); no flow Feb. 1 to Mar. 13.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 20 to Mar. 30)

3.45	0.12	3.7	4.0	5.0	61
3.5	.39	4.0	11	5.5	94
3.6	1.8	4.5	31	6.0	140

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

06479515 WILLOW CREEK NEAR WATERTOWN, SD

LOCATION.--Lat 44°54'17", long 97°03'31", in NE¼NW¼ sec.34, T.117 N., R.52 W., Codington County, Hydrologic Unit 10170202, on right bank 5 ft (2 m) downstream from bridge, 4.7 mi (7.6 km) upstream from mouth, and 2.8 mi (4.5 km) east of Watertown.

DRAINAGE AREA.--125 mi² (324 km²), approximately.

PERIOD OF RECORD.--September 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,721.24 ft (524.634 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--9 years, 14.6 ft³/s (0.413 m³/s), 10,580 acre-ft/yr (13.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,930 ft³/s (83.0 m³/s) Mar. 31, 1978, gage height, 7.02 ft (2.140 m); maximum gage height, 9.86 ft (3.005 m) Mar. 15, 1972 (backwater from ice); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 636 ft³/s (18.0 m³/s) at 0100 hours, June 5, gage height, 5.45 ft (1.661 m), no other peak above base of 200 ft³/s (5.66 m³/s); minimum daily discharge, 0.04 ft³/s (0.001 m³/s) Sept. 10.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 7 to May 14, June 28 to Sept. 30; stage-discharge relation affected by ice Jan. 29 to Apr. 6)

3.15	0	3.4	0.90	3.7	6.5	4.3	113
3.2	.11	3.5	1.5	3.8	15	4.6	205
3.3	.50	3.6	2.6	3.9	30	4.9	340

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	---	[illegible]	[illegible]	---	[illegible]	---	[illegible]	---	[illegible]	[illegible]	---
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AC-FT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CAL YR 1979 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]

06479525 BIG SIOUX RIVER NEAR CASTLEWOOD, SD

LOCATION.--Lat 44°43'54", long 97°02'39", in SW¼SW¼ sec.26, T.115 N., R.52 W., Hamlin County, Hydrologic Unit 10170202, on right bank at upstream side of highway bridge on State Highway 22, 3.25 mi (5.2 km) east of intersection of U.S. Highway 81 and State Highway 22, and 1.0 mi (1.6 km) northwest of Castlewood.

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,667.52 ft (508.260 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,740 ft³/s (49.3 m³/s) Mar. 31, 1978, gage height, 11.10 ft (3.383 m); maximum gage height, 11.24 ft (3.426 m) Apr. 13, 1979; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 617 ft³/s (17.5 m³/s) at 2100 hours, June 5, gage height, 8.80 ft (2.682 m), no other peak above base of 450 ft³/s (12.7 m³/s); minimum daily discharge, 6.2 ft³/s (0.176 m³/s) Sept. 19, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	50	26	18	9.4	6.6	98	18	15	58	19	10
2	39	52	25	16	9.4	6.7	92	18	16	57	16	9.5
3	38	47	26	15	9.3	6.8	58	18	25	57	18	9.5
4	36	42	20	13	9.2	6.9	44	18	33	57	20	9.1
5	36	39	27	12	9.0	7.0	32	18	405	58	15	8.8
6	35	38	25	11	8.9	7.2	24	16	419	58	12	8.8
7	35	39	22	9.5	8.8	7.5	25	15	215	60	11	7.7
8	33	34	20	8.6	8.8	8.0	28	14	173	58	11	7.7
9	33	43	21	8.0	8.7	8.2	27	14	149	55	10	7.3
10	33	112	23	8.0	8.5	8.7	27	17	116	58	12	7.0
11	33	78	21	8.0	8.4	9.0	27	17	96	55	23	7.0
12	33	69	19	9.2	8.0	12	28	16	87	53	16	6.7
13	32	66	17	12	8.4	20	23	17	82	51	13	7.0
14	32	35	16	15	8.4	35	21	16	72	50	11	7.7
15	32	36	15	17	8.2	60	21	16	66	45	11	7.0
16	32	32	16	16	7.8	150	19	18	59	61	15	7.3
17	31	32	15	16	7.6	300	19	13	54	66	20	7.6
18	30	32	17	15	7.2	290	19	13	58	62	16	6.3
19	30	31	20	15	7.8	280	21	13	56	61	21	6.2
20	30	30	27	15	8.0	210	20	15	61	60	22	6.2
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	---	[illegible]	[illegible]	---	[illegible]	---	[illegible]	---	[illegible]	[illegible]	---
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.2
AC-FT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CAL YR 1979 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]

06479529 STRAY HORSE CREEK NEAR CASTLEWOOD, SD

LOCATION.--Lat 44°43'52", long 96°57'23", in NE¼NE¼NW¼ sec.33, T.115 N., R.51 W., Hamlin County, Hydrologic Unit 10170202, on right bank at downstream side of bridge on State Highway 22, 3.5 mi (5.6 km) east of Castlewood, 6.4 mi (10.3 km) upstream from mouth, and 7.0 mi (11.3 km) north of Dempster.

DRAINAGE AREA.--73.7 mi² (191 km²), approximately.

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,703.88 ft (519.343 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--12 years, 12.0 ft³/s (0.340 m³/s), 8,690 acre-ft/yr (10.7 hm³/yr); median of yearly mean discharges, 8.2 ft³/s (0.23 m³/s), 5,900 acre-ft/yr (7.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft³/s (396 m³/s) Apr. 7, 1969, gage height, 14.65 ft (4.465 m), from rating curve extended above 3,500 ft³/s (99.1 m³/s) on basis of contracted-opening measurement of peak flow; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 175 ft³/s (4.96 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 18	0045	632	17.9	8.53	2.600	June 5	0700	623	17.6	8.48	2.585
Mar. 21	0745	316	8.95	7.66	2.335	June 22	2000	*1,750	49.6	*10.09	3.075
Mar. 22	0500	211	5.98	7.21	2.198						

Minimum daily discharge, 0.14 ft³/s (0.004 m³/s) Mar. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

06479640 HIDEWOOD CREEK NEAR ESTELLINE, SD

LOCATION.--Lat 44°36'42", long 96°54'17", in SW¼NW¼ sec.12, T.113 N., R.51 W., Hamlin County, Hydrologic Unit 10170202, on left bank at upstream side of highway bridge, 2.7 mi (4.3 km) north of Estelline, 2.8 mi (4.5 km) southeast of Dempster, and 4.7 mi (7.6 km) upstream from mouth.

DRAINAGE AREA.--164 mi² (425 km²), approximately.

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,665 ft (507 m).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--12 years, 25.4 ft³/s (0.719 m³/s), 18,400 acre-ft/yr (22.7 hm³/yr); median of yearly mean discharges, 18 ft³/s (0.51 m³/s), 13,000 acre-ft/yr (16 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,630 ft³/s (103 m³/s) Apr. 7, 1969, gage height, 11.36 ft (3.463 m); maximum gage height, 11.55 ft (3.520 m) Apr. 8, 1969 (backwater from collapsed bridge), no flow at times in 1969, 1971, 1974-77.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s (8.50 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/)	Gage height (ft)	Gage height (m)
Mar. 16	--	400	11.3	a7.18	2.188	June 5	1115	*2,070	58.	*10.06	3.066
June 3	1915	314	8.89	5.99	1.826						

a Ice jam.
Minimum daily discharge, 0.02 ft³/s (0.001 m³/s) Sept. 23, 26, 27.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 4-6, June 1-11; stage-discharge relation affected by ice Dec. 17, 18, Jan. 6-14, Jan. 26 to Mar. 24)

2.08	0	2.3	2.2	2.9	22	5.0	228	8.0	1,185
2.1	.04	2.4	4.1	3.4	55	6.0	434	9.0	1,740
2.2	.60	2.6	9.5	4.2	130	7.0	766		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

06479910 SIXMILE CREEK NEAR BROOKINGS, SD

LOCATION.--Lat 44°20'46", long 96°44'51", in NE¼SE¼ sec.7, T.110 N., R.49 W., Brookings County, Hydrologic Unit 10170202, on left bank 8 ft (2 m) downstream from bridge, 0.7 mi (1.1 km) upstream from Interstate Highway 29 and 2.7 mi (4.3 km) northeast of Brookings.

DRAINAGE AREA.--54.0 mi^2 (140 km^2), approximately.

PERIOD OF RECORD.--September 1970 to September 1980 (discontinued). February 1951 to August 1970 (gage heights and discharge measurements only in files of Corps of Engineers).

REVISED RECORDS.--WRD SD-76-1: 1975.

GAGE.--Water-stage recorder. Datum of gage is 1,618.57 ft (493.340 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 1, 1970, at datum 3.00 ft (0.914 m) higher, and Sept. 1, 1970, to Nov. 2, 1975, at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--10 years, 7.37 ft^3/s (0.209 m^3/s), 5,340 acre-ft/yr (6.58 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 936 ft^3/s (26.5 m^3/s) Mar. 28, 1978, gage height, 9.45 ft (2.880 m); maximum gage height, 10.17 ft (3.100 m) Mar. 24, 1978 (backwater from ice); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 3	0430	189	5.35	7.33	2.234	June 8	0645	122	3.46	6.64	2.024
June 5	2330	384	10.9	8.61	2.624	June 25	0530	*760	21.5	*9.84	2.999

No flow Feb. 1 to Mar. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

06480000 BIG SIOUX RIVER NEAR BROOKINGS, SD

LOCATION.--Lat 44°10'48", long 96°44'55", in NW¼NW¼ sec.8, T.108 N., R.49 W., Moody County, Hydrologic Unit 10170203, on right bank 3 ft (1 m) downstream from highway bridge, 2.2 mi (3.5 km) downstream from Medary Creek and 9.5 mi (15.3 km) southeast of Brookings.

DRAINAGE AREA.--4,420 mi² (11,450 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

PERIOD OF RECORD.--August 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,551.91 ft (473.022 m) National Geodetic Vertical Datum of 1929. Prior to May 30, 1959, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--27 years, 164 ft³/s (4.644 m³/s), 118,800 acre-ft/yr (146 hm³/yr); median of yearly mean discharges, 120 ft³/s (3.40 m³/s), 86,900 acre-ft/yr (110 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,900 ft³/s (960 m³/s) Apr. 9, 1969, gage height, 14.77 ft (4.502 m); no flow at times in 1956, 1959, 1976, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 10	2400	1,000	28.3	7.65	2.332	June 25	2300	*3,820	108	*11.93	3.636

Minimum daily discharge, 19 ft³/s (0.54 m³/s) Mar. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]		[illegible]	[illegible]		[illegible]		[illegible]		[illegible]	[illegible]	
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AC-FT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CAL YR 1979 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD

LOCATION.--Lat 43°47'25", long 96°44'42", in NW¼NW¼ sec.29, T.104 N., R.49 W., Minnehaha County, Hydrologic Unit 10170203, on left bank at downstream side of highway bridge, 0.2 mi (0.3 km) downstream from confluence of divided channels and 3.0 mi (4.8 km) southwest of Dell Rapids.

DRAINAGE AREA.--5,060 mi² (13,100 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1948 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,455.99 ft (443.786 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 11, 1949, nonrecording gage and Nov. 11, 1949, to Sept. 30, 1951, water-stage recorder, at present site at datum 0.04 ft (0.012 m) lower.

REMARKS.--Records good except those for winter periods, which are poor. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--32 years, 258 ft³/s (7.307 m³/s), 186,900 acre-ft/yr (230 hm³/yr); median of yearly mean discharges, 200 ft³/s (5.66 m³/s), 145,000 acre-ft/yr (180 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,300 ft³/s (1,170 m³/s) Apr. 9, 1969, gage height, 16.47 ft (5.020 m); no flow Aug. 25 to Oct. 17, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,180 ft³/s (61.7 m³/s) at 2045 hours, June 29, gage height, 9.30 ft (2.835 m), no other peak above base of 1,000 ft³/s (28.3 m³/s); minimum daily discharge, 38 ft³/s (1.08 m³/s) Feb. 13, 14.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 3 to Jan. 5, Jan. 13 to Mar. 15; stage-discharge relation affected by ice Nov. 24 to Dec. 2, Jan. 6-12, Mar. 16-25)

3.0	32	7.0	1,230
3.3	66	10.0	2,550
4.0	230		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-62, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to September 1970, October 1973 to current year.
WATER TEMPERATURES: October 1967 to September 1971, October 1974 to September 1975.
SUSPENDED SEDIMENT DISCHARGE: October 1967 to September 1976.

REMARKS.--There are many days of no samples during the year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,100 micromhos Jan. 27, 1977; minimum daily, 140 micromhos Apr. 9, 1969.
WATER TEMPERATURES: Maximum daily, 33.5°C July 7, 12, 16, 20, 1974; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 619 mg/L Apr. 19, 1974; minimum daily mean, 0 mg/L Aug. 25 to Sept. 30, 1976.
SEDIMENT LOADS: Maximum daily, 40,600 tons (36,800 tonnes) Apr. 9, 1969; minimum daily, 0 ton (0 tonne) Aug. 8, 9, 14, Aug 24 to Sept. 30, 1976.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,220 micromhos Feb. 19; minimum daily, 380 micromhos Mar. 19.
WATER TEMPERATURES: Maximum daily, 31.0°C July 13; minimum daily, 0.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT 2...	1200	110	850	8.0	5.5	390	100	79	46
NOV [illegible]...	0925	104	1220	7.0	.0	530	230	120	55
DEC [illegible]...	1115	114	1130	7.6	.0	530	310	120	56
JAN 4...	1310	67	1100	7.2	.5	540	260	120	58
FEB [illegible]...	1330	46	1230	7.2	.5	560	200	130	58
MAR [illegible]...	1005	40	970	7.2	.0	430	100	96	46
APR [illegible]...	1005	222	730	8.0	6.0	320	120	76	31
MAY [illegible]...	0930	127	820	8.6	13.0	450	200	95	51
JUN [illegible]...	1000	60	910	7.9	20.5	410	180	88	47
JUL [illegible]...	1020	306	850	8.5	27.0	420	150	100	41
AUG [illegible]...	1020	75	850	--	26.5	380	100	83	41
SEP [illegible]...	1005	53	750	7.6	20.0	350	170	79	43

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT									
25...	31	24	.7	8.5	40	210	200	27	.3
NOV									
30...	34	12	.6	8.4	42	300	270	26	.3
DEC									
19...	35	12	.7	7.9	43	220	270	28	.2
JAN									
21...	37	13	.7	7.6	45	280	28	260	.3
FEB									
12...	42	14	.8	7.6	50	320	280	36	.3
MAR									
13...	34	14	.7	7.8	42	290	210	30	.3
APR									
09...	21	12	.5	6.0	--	240	140	19	.2
MAY									
07...	35	14	.7	7.3	--	290	210	25	.4
JUN									
04...	32	14	.7	7.3	--	230	220	24	.2
JUL									
09...	22	10	.5	7.0	--	270	170	16	.3
AUG									
12...	26	13	.6	7.5	--	200	180	22	.3
SEP									
09...	33	15	.7	7.0	--	180	200	29	.3

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO-PHOSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHO-PHOSPHATE DISSOL. (MG/L AS PO4) (00660)
OCT									
25...	1.6	521	.71	166	.13	.110	.010	.01	.03
NOV									
30...	12	714	.97	400	1.8	.120	.070	.07	.21
DEC									
19...	11	672	.91	206	2.1	.109	.030	.03	.09
JAN									
21...	9.5	[illegible]	.95	126	2.5	1.000	.070	.08	.25
FEB									
12...	8.1	747	1.02	46.7	2.7	.170	--	.11	.34
MAR									
13...	8.1	596	.81	77.0	2.5	.500	.020	.23	.71
APR									
09...	8.5	483	.58	257	.40	.370	.110	.07	.21
MAY									
07...	8.5	[illegible]	.70	190	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUN									
04...	8.5	[illegible]	.77	180	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUL									
09...	[illegible]	[illegible]	.73	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUG									
12...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SEP									
09...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	940	820	---	---	1140	1060	670	840	920	510	790	780
2	920	860	---	960	1160	---	610	900	925	560	800	830
3	910	770	---	980	---	1070	640	890	920	640	800	760
4	950	740	---	970	---	1130	690	890	875	580	790	---
5	960	770	---	---	1150	1160	740	910	850	740	780	770
6	940	830	---	---	1160	---	760	920	860	720	760	770
7	960	860	---	---	1160	1160	770	930	850	740	760	780
8	---	---	---	---	1160	1170	770	920	850	790	760	800
9	920	930	---	---	---	810	790	930	850	800	790	---
10	900	930	---	---	---	710	770	950	850	820	900	880
11	870	910	---	---	---	1010	780	---	850	820	800	790
12	880	960	---	---	1150	1060	780	960	850	800	800	790
13	860	870	---	---	1150	1020	760	925	850	820	690	800
14	890	840	---	---	1150	1030	760	950	850	810	690	800
15	880	870	---	---	980	990	760	930	---	810	720	810
16	880	850	---	---	---	760	780	930	850	810	780	---
17	890	940	1130	---	1120	850	810	930	850	790	750	830
18	---	970	1060	---	1130	900	820	940	850	800	710	810
19	820	900	1180	---	1100	860	840	920	850	790	710	810
20	820	970	1060	---	1120	850	850	910	---	800	780	800
21	---	910	1090	---	1080	890	860	900	---	770	780	810
22	850	---	1090	---	980	940	870	870	850	740	800	800
23	850	930	---	1110	1010	920	910	870	850	710	800	---
24	850	---	1080	1040	980	910	910	870	850	710	---	870
25	870	---	1080	1020	1010	900	940	900	850	740	790	910
26	800	900	---	---	900	920	900	870	850	790	780	810
27	880	1060	1080	---	1010	930	890	870	850	770	800	810
28	---	1090	1030	---	1030	880	970	870	850	740	830	810
29	880	---	1010	1100	1040	880	970	870	850	740	800	810
30	830	---	---	1130	---	880	970	870	850	790	---	810
31	820	---	900	1160	---	880	---	890	---	780	---	---
MEAN	882	910	1100	1050	1070	920	800	905	850	760	765	800

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

06481500 SKUNK CREEK AT SIOUX FALLS, SD

LOCATION.--Lat 43°32'01", long 96°47'20", in [illegible] sec.28, T.101 N., R.50 W., Minnehaha County, Hydrologic Unit [illegible], on right bank [illegible] downstream from bridge [illegible], [illegible] upstream from mouth, [illegible] downstream from small right-bank tributary, and [illegible] of Sioux Falls.

DRAINAGE AREA.--570 mi² (1,480 km²), approximately.

PERIOD OF RECORD.--May 1948 to September 1971 (published as "near Sioux Falls"). October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is [illegible] National Geodetic Vertical Datum of [illegible] (Corps of Engineers bench mark). Prior to [illegible], nonrecording gage, and [illegible] 1972, water-stage recorder, both at site [illegible] upstream at datum [illegible] higher.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--[illegible] years, [illegible] acre-ft/yr [illegible]; median of yearly mean discharges, [illegible] acre-ft/yr [illegible].

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, [illegible] June 17, [illegible], gage height, [illegible], site and datum then in use, from rating curve extended above [illegible] on basis of slope-area measurement of peak flow; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, [illegible] June [illegible], gage height, [illegible], no peak above base of [illegible]; minimum daily discharge, [illegible] Sept. [illegible].

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER [illegible] TO SEPTEMBER [illegible]
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AC-FT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CAL YR [illegible] TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]
WTR YR [illegible] TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]

06482020 BIG SIOUX RIVER AT NORTH CLIFF AVENUE, AT SIOUX FALLS, SD

LOCATION.--Lat 43°34'01", long 96°42'39", in SW¼NW¼ sec.10, T.101 N., R.49 W., Minnehaha County, Hydrologic Unit 10170203, on right bank 20 ft (6 m) downstream from bridge on North Cliff Avenue and 4.1 mi (6.6 km) upstream from Slip Up Creek.

DRAINAGE AREA.--5,770 mi² (14,940 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1962 to September 1971 (gage heights and discharge measurements only in files of Corps of Engineers). October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,294.18 ft (394.466 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Dec. 15, 1971, nonrecording gage 20 ft (6 m) upstream at same datum.

REMARKS.--Records good. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--9 years, 304 ft³/s (8.609 m³/s), 220,200 acre-ft/yr (272 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,020 ft³/s (170 m³/s) Mar. 24, 1978, gage height, 17.54 ft (5.346 m); maximum gage height, 17.62 ft (5.371 m) Mar. 22, 1978; minimum daily discharge, 2.1 ft³/s (0.059 m³/s) Jan. 14, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 10, 1969, reached a stage of 27.45 ft (8.367 m), discharge, 40,700 ft³/s (1,150 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 30	0930	2,080	58.9	11.66	3.554	July 4	0545	1,430	40.5	9.88	3.011

Minimum daily discharge, 37 ft³/s (1.05 m³/s) Sept. 28.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

4.8	31	5.5	197	9.0	1,142
5.0	63	6.0	333	12.0	2,195

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	182	569	208	160	77	64	337	193	101	1930	122	105
2	171	616	208	159	75	61	314	187	153	1650	111	100
3	165	605	221	148	73	70	385	185	113	1240	96	91
4	160	585	229	153	79	70	380	170	168	1120	99	78
5	160	550	233	155	81	66	355	176	575	818	87	99
6	154	472	224	146	79	67	320	169	862	641	79	128
7	151	433	224	99	78	65	312	162	858	569	79	98
8	151	404	190	124	78	62	323	156	708	505	82	87
9	146	379	216	114	74	71	332	144	644	447	112	74
10	146	324	239	124	73	82	342	148	665	390	106	78
11	146	305	209	117	72	81	330	135	756	354	94	55
12	144	304	188	109	72	89	306	145	871	319	91	50
13	141	294	193	109	70	85	282	152	925	285	144	48
14	139	292	204	110	66	93	276	134	880	308	119	45
15	145	298	198	115	64	120	264	131	741	263	137	50
16	144	298	148	119	60	224	232	130	598	233	155	47
17	141	301	150	118	62	267	214	143	491	218	130	47
18	154	293	159	117	65	351	232	136	422	216	131	47
19	143	288	163	114	66	540	227	134	376	213	140	48
20	135	274	164	113	69	457	226	132	320	228	145	46
21	139	328	167	116	82	428	231	124	283	242	132	50
22	146	296	165	116	100	506	231	118	262	221	126	60
23	146	281	162	116	94	486	220	113	243	203	136	45
24	150	216	163	124	85	475	216	105	229	185	122	45
25	154	219	159	122	75	449	214	93	232	177	125	45
26	158	272	164	102	86	410	210	125	229	164	126	42
27	159	235	164	103	85	359	207	211	638	150	116	39
28	154	178	164	96	79	355	208	140	1290	147	103	37
29	163	168	163	87	67	361	202	238	1840	143	96	41
30	285	197	160	85	---	349	197	226	2040	133	86	43
31	546	---	163	85	---	341	---	137	---	123	119	---
TOTAL	5218	10276	5760	3675	2186	7506	8125	4702	18513	13835	3546	1860
MEAN	168	343	186	119	75.4	242	271	152	617	446	114	62.0
MAX	546	616	239	160	100	540	385	238	2040	1930	155	128
MIN	135	168	148	85	60	61	197	93	101	123	79	37
AC-FT	10350	20380	11420	7290	4340	14890	16120	9330	36720	27440	7030	3690

CAL YR 1979 TOTAL 228160 MEAN 625 MAX 4520 MIN 20 AC-FT 452600
WTR YR 1980 TOTAL 85202 MEAN 233 MAX 2040 MIN 37 AC-FT 169000

06482020 BIG SIOUX RIVER AT NORTH CLIFF AVENUE, AT SIOUX FALLS, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT										
26...	0845	158	1250	8.1	8.0	10.7	49	3600	390	170
NOV										
29...	1430	191	2000	7.4	4.0	12.2	440	ND	--	--
DEC										
19...	1245	166	1730	7.7	5.0	12.4	41	2230	--	--
JAN										
21...	1600	126	1550	7.2	4.0	13.6	32	K17	470	260
FEB										
12...	1615	75	2400	7.2	4.5	13.1	36	50	--	--
MAR										
13...	1500	87	2000	7.3	6.0	13.2	55	160	--	--
APR										
09...	1530	336	1260	8.0	10.0	9.4	57	K72600	370	160
MAY										
07...	1615	164	1560	8.2	16.0	10.4	40	K85	--	--
JUN										
04...	1645	290	1290	7.5	20.0	8.1	71	K48500	--	--
JUL										
10...	1000	396	1150	7.6	27.0	7.8	47	K440	390	160
AUG										
12...	1015	89	1550	--	23.0	7.1	41	8700	--	--
SEP										
10...	1030	69	1650	8.0	22.5	9.4	100	11800	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT										
26...	84	43	120	54	2.7	12	130	220	250	130
NOV										
29...	--	--	--	--	--	--	--	--	--	--
DEC										
19...	--	--	--	--	--	--	--	--	--	--
JAN										
21...	110	48	110	33	2.2	10	120	210	310	150
FEB										
12...	--	--	--	--	--	--	--	--	--	--
MAR										
13...	--	--	--	--	--	--	--	--	--	--
APR										
09...	88	36	100	36	2.3	12	--	210	200	130
MAY										
07...	--	--	--	--	--	--	--	--	--	--
JUN										
04...	--	--	--	--	--	--	--	--	--	--
JUL										
10...	93	38	87	32	1.9	11	--	230	200	100
AUG										
12...	--	--	--	--	--	--	--	--	--	--
SEP										
10...	--	--	--	--	--	--	--	--	--	--

K Non-ideal colony count.
ND Not detected.

06482020 BIG SIOUX RIVER AT NORTH CLIFF AVENUE, AT SIOUX FALLS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 26...	6.4	776	778	31	1.06	331	.50	4.8	5.8	.20
NOV 29...	--	1120	--	12	1.52	578	1.4	8.4	10	3.6
DEC 19...	--	1080	--	1	1.47	484	1.3	6.5	7.9	4.5
JAN 21...	12	939	876	21	1.28	319	1.5	6.7	8.1	3.2
FEB 12...	--	1310	--	1	1.78	265	2.9	8.2	9.9	8.8
MAR 13...	--	1150	--	0	1.56	273	2.7	8.4	10	5.6
APR 09...	10	756	702	26	1.03	686	1.0	4.8	5.8	3.8
MAY 07...	--	951	--	38	1.29	421	.80	6.7	8.1	2.7
JUN 04...	--	761	--	180	1.04	596	.58	4.3	5.2	7.7
JUL 10...	20	730	687	79	.99	781	.21	1.2	1.5	2.0
AUG 12...	--	917	--	70	1.25	220	1.2	1.9	2.3	--
SEP 10...	--	848	--	46	1.15	158	.19	6.5	7.9	3.5

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, TOTAL (MG/L AS PO4) (71886)	CYANIDE TOTAL (MG/L AS CN) (00720)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)
OCT 26...	5.0	5.5	24	2.600	8.0	.00	0	0	0
NOV 29...	12	13	59	3.800	12	.01	0	0	70
DEC 19...	11	12	54	.020	.06	.01	--	0	30
JAN 21...	9.9	11	50	1.600	4.9	.01	100	0	10
FEB 12...	17	20	88	4.100	13	.01	0	0	30
MAR 13...	14	17	74	5.300	16	.01	100	2	40
APR 09...	8.6	9.6	43	2.300	7.1	.00	100	0	30
MAY 07...	9.4	10	45	3.200	9.8	.01	10	0	30
JUN 04...	12	13	56	.120	.37	.00	10	0	150
JUL 10...	3.2	3.4	15	1.800	5.5	.00	100	0	40
AUG 12...	--	--	--	3.500	11	.01	100	0	20
SEP 10...	10	10	45	3.900	12	.01	0	0	30

06482610 SPLIT ROCK CREEK AT CORSON, SD

LOCATION.--Lat 43°36'59", long 96°33'54", in NE¼NW¼ sec.26, T.102 N., R.48 W., Minnehaha County, Hydrologic Unit 10170203, on left bank 6 ft (2 m) downstream from highway bridge, 0.3 mi (0.5 km) east of Corson and 3.4 mi (5.5 km) upstream from mouth.

DRAINAGE AREA.--475 mi² (1,230 km²), approximately.

PERIOD OF RECORD.--October 1965 to current year. February 1951 to September 1965 (gage heights and discharge measurements only in files of Corps of Engineers).

GAGE.--Water-stage recorder. Datum of gage is 1,304.22 ft (397.526 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Aug. 15, 1964, nonrecording gage at datum 0.15 ft (0.046 m) higher and Aug. 15, 1964, to Sept. 3, 1970, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--15 years, 67.1 ft³/s (1.900 m³/s), 48,610 acre-ft/yr (59.9 hm³/yr); median of yearly mean discharges, 52 ft³/s (1.47 m³/s), 37,700 acre-ft/yr (46 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,800 ft³/s (504 m³/s) Apr. 8, 1969, gage height, 15.00 ft (4.572 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1951, 15.41 ft (4.697 m) June 17, 1957, discharge, 19,300 ft³/s (547 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 31	1900	1,310	37.1	6.09	1.856
May 30	unknown	1,110	31.4	5.66	1.725
June 4	2100	*2,230	63.2	*7.22	2.201

Minimum daily discharge, 3.8 ft³/s (0.108 m³/s) July 24.

Rating table (gage height, in feet, and discharge, in cubic feet per second) (Shifting-control method used June 25 to July 23; stage-discharge relation affected by ice Dec. 12 to Mar. 19)

1.7	3.4	2.0	17	2.3	41	3.0	155	5.0	750
1.8	7.2	2.1	22	2.6	84	4.0	395	6.0	1,270

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	1040	79	45	16	16	87	48	350	19	6.9	25
2	34	710	77	46	20	13	90	45	200	19	6.5	23
3	34	717	78	46	22	15	114	44	120	19	5.7	18
4	33	646	76	45	24	18	179	43	345	33	5.7	15
5	33	459	82	44	25	16	133	38	748	49	4.8	12
6	31	330	87	43	25	14	114	37	474	29	4.8	17
7	32	245	94	41	24	15	110	37	292	27	4.1	16
8	31	201	92	40	23	20	112	34	224	24	3.9	14
9	31	175	90	40	23	40	110	32	220	23	5.4	13
10	31	147	87	39	22	60	103	31	193	21	6.8	11
11	34	129	79	38	21	54	95	30	135	19	7.2	12
12	34	119	77	38	20	48	84	27	93	19	6.9	13
13	32	116	70	38	20	46	72	29	76	16	14	12
14	30	109	64	38	20	50	64	29	62	16	29	11
15	30	107	49	38	19	70	57	29	52	15	28	10
16	29	104	45	37	19	120	53	27	85	14	20	9.4
17	28	102	42	37	18	200	53	39	39	13	27	8.9
18	30	100	40	37	17	180	57	38	35	13	31	6.0
19	46	99	41	37	16	340	59	33	32	12	28	5.0
20	51	93	43	37	17	328	60	31	29	22	24	6.0
21	41	96	45	36	19	161	60	27	26	17	26	7.0
22	37	88	45	36	21	139	60	24	26	7.9	26	6.3
23	36	65	45	30	22	112	56	23	24	5.2	23	5.2
24	34	75	43	33	21	92	54	31	23	3.8	24	4.5
25	31	87	42	34	19	80	57	32	27	5.9	26	3.9
26	30	92	41	20	16	72	53	233	24	9.3	28	4.0
27	28	95	42	18	20	74	52	43	25	9.0	25	5.2
28	27	88	42	18	19	72	54	235	22	8.4	22	5.8
29	26	73	43	18	18	76	52	730	20	7.8	19	5.0
30	36	85	44	17	---	95	50	840	20	7.4	18	4.1
31	826	---	45	16	---	95	---	640	---	6.9	22	---
TOTAL	1823	6592	1869	1080	586	2731	2354	3559	4001	510.6	520.7	308.3
MEAN	58.8	220	60.3	34.8	20.2	88.1	78.5	115	133	16.5	17.1	10.3
MAX	826	1040	94	46	25	340	179	840	748	49	31	25
MIN	26	65	40	16	16	13	50	23	20	3.8	3.9	3.9
AC-FT	3620	13080	3710	2140	1160	5420	4670	7060	7940	1010	1050	612

CAL YR 1979 TOTAL 84500.6 MEAN 232 MAX 7510 MIN 5.8 AC-FT 167600
WTR YR 1980 TOTAL 25942.6 MEAN 70.9 MAX 1040 MIN 3.8 AC-FT 51460

06485500 BIG SIOUX RIVER AT AKRON, IA

LOCATION.--Lat 42°49'42", long 96°33'45", in NW¼SW¼ sec.31, T.93 N., R.48 W., Plymouth County, Hydrologic Unit 10170203, on left bank at west edge of Akron, 0.6 mi (1.0 km) downstream from bridge on State Highway 48, and 2.3 mi (3.7 km) upstream from Union Creek.

DRAINAGE AREA.--9,030 mi² (23,390 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1928 to current year.

REVISED RECORDS.--WSP 1309: 1929(M), 1931-33(M), 1936(M), 1938(M), 1940(M). WSP 1389: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,118.90 ft (341.041 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 3, 1934, nonrecording gage at bridge 300 ft (91 m) upstream at same datum.

REMARKS.--Records good except those for the winter months, which are poor. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--52 years, 860 ft³/s (24.36 m³/s), 623,100 acre-ft/yr (768 hm³/yr); median of yearly mean discharges, 730 ft³/s (20.7 m³/s), 529,000 acre-ft/yr (650 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,800 ft³/s (2,290 m³/s) Apr. 9, 1969, gage height, 22.99 ft (7.007 m); minimum daily, 4.0 ft³/s (0.11 m³/s) Jan. 17, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft³/s (99.1 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Nov. 4	1700	*8,730	247	*17.10	5.212	June 8	0700	5,500	156	14.17	4.319
May 30	0900	4,530	128	12.76	3.889						

Minimum daily discharge, 191 ft³/s (5.41 m³/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	849	2870	1150	900	530	770	1460	994	2030	1750	329	375
2	806	4770	1180	850	530	700	1530	964	2120	2050	319	361
3	778	6020	1270	850	530	650	1580	930	1650	2060	303	379
4	755	8330	1480	860	520	640	1850	899	1350	2000	315	391
5	721	7810	1690	850	515	635	2830	866	1540	2150	308	394
6	688	5560	1640	830	505	630	2910	834	2390	1700	278	358
7	666	4400	1820	780	500	635	2740	800	4680	1550	268	404
8	650	3910	1960	730	500	700	2290	761	5340	1220	262	415
9	626	3420	1660	690	495	710	2090	734	3850	1050	262	414
10	607	3040	1510	660	490	730	1980	714	2740	963	416	373
11	600	2710	1770	670	490	770	1900	691	2340	891	332	329
12	589	2420	1710	690	490	800	1800	669	2110	817	330	309
13	578	2250	1290	730	485	840	1680	666	1980	743	332	286
14	563	2140	1240	740	485	860	1560	659	1950	686	305	265
15	552	2070	1220	760	485	940	1460	676	1920	639	300	252
16	544	2020	1140	760	485	1330	1380	657	1800	609	431	253
17	537	1980	980	750	480	1810	1330	658	1650	592	509	242
18	542	1950	1000	740	480	2960	1280	680	1480	550	512	238
19	563	1920	1100	720	475	2890	1250	738	1320	521	503	236
20	613	1880	1140	710	485	2360	1260	786	1190	520	479	249
21	712	1870	1160	700	515	2230	1270	782	1090	490	455	296
22	744	2000	1160	690	700	2010	1270	747	1030	468	530	253
23	723	2190	1080	670	1280	1690	1240	693	958	472	566	238
24	688	2150	1090	660	1120	1570	1210	644	901	468	539	236
25	672	2000	1060	650	990	1440	1170	604	849	448	503	231
26	656	1970	1020	630	920	1340	1140	571	800	439	488	215
27	649	2040	1000	600	870	1300	1110	547	780	409	518	208
28	634	2030	970	590	850	1240	1090	532	753	392	497	203
29	629	1760	960	570	820	1210	1060	816	812	369	467	197
30	697	1190	940	540	---	1200	1030	3400	1260	352	430	191
31	1070	---	920	540	---	1300	---	1400	---	338	400	---
TOTAL	20701	90670	39510	22110	18020	38910	47750	26112	54663	27706	12486	8791
MEAN	668	3022	1275	713	621	1255	1592	842	1822	894	403	293
MAX	1070	8330	1960	900	1280	2960	2910	3400	5340	2150	566	415
MIN	537	1190	920	540	475	630	1030	532	753	338	262	191
AC-FT	41060	179800	78370	43860	35740	77180	94710	51790	108400	54950	24770	17440

CAL YR 1979 TOTAL 852930 MEAN 2337 MAX 29000 MIN 58 AC-FT 1692000
WTR YR 1980 TOTAL 407429 MEAN 1113 MAX 8330 MIN 191 AC-FT 808100

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued
(National stream-quality accounting network station)
(National pesticide water-monitoring network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,310 micromhos Jan. 20, 1977; minimum daily, 260 micromhos Mar. 20, 23, 1978.
WATER TEMPERATURES: Maximum daily, 31.0°C Feb. 19, 1975, July 23, 1976; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,190 micromhos Feb. 1; minimum daily, 460 micromhos June 8.
WATER TEMPERATURES: Maximum daily, 28.0 July 11; minimum daily, 0.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)
OCT 25...	0900	674	1000	8.4	5.5	8.7	11.9	350	510	500	220	120
NOV 29...	1125	1820	1120	7.2	.5	19	12.9	360	2000	500	170	120
DEC 19...	0900	1100	1220	7.5	.0	8.2	11.0	320	340	570	220	140
JAN 31...	1130	540	1320	7.2	.5	4.3	11.8	K190	90	560	230	140
FEB 28...	1130	850	830	7.4	1.0	14	8.1	750	7500	360	160	91
MAR 19...	1015	2940	490	8.0	2.5	110	9.0	225	90	190	57	47
APR 24...	1030	1220	830	8.6	15.0	28	11.6	32	23	440	180	100
MAY 20...	1100	786	940	8.3	13.0	30	13.7	115	120	450	220	99
JUN 25...	0915	853	830	8.8	25.0	40	8.9	240	70	390	170	88
JUL 23...	1030	474	860	8.3	24.5	18	8.6	1680	K80	330	170	71
AUG 27...	1230	519	740	7.6	21.5	55	10.8	18000	1600	310	140	73
SEP 24...	1130	248	830	7.6	15.5	36	13.1	940	280	310	160	60

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)
OCT 25...	48	35	20	.7	7.9	43	280	190	43	.5	14	674
NOV 29...	49	25	10	.5	5.0	30	330	190	28	.5	18	699
DEC 19...	53	35	18	.6	5.3	40	350	220	40	.6	19	807
JAN 31...	50	37	13	.7	4.9	42	330	240	43	.5	18	799
FEB 28...	32	32	16	.7	15	47	200	140	47	.3	14	514
MAR 19...	17	13	12	.4	8.8	22	130	65	19	.2	8.9	292
APR 24...	46	26	11	.5	5.2	--	260	190	29	.5	5.7	611
MAY 20...	49	35	14	.7	4.5	--	230	210	36	.3	2.8	591
JUN 25...	42	26	12	.6	5.2	--	220	170	28	.3	13	546
JUL 23...	37	40	20	1.0	6.7	--	160	190	48	.4	4.0	543
AUG 27...	32	36	20	.9	7.1	--	170	150	44	.3	3.3	466
SEP 24...	39	47	24	1.2	7.5	--	150	200	61	.4	.2	540

K Non-ideal colony count.

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT												
25...	644	.92	1710	--	3.9	4.8	.03	.04	.04	.05	.95	1.1
NOV												
29...	668	.95	3910	--	7.8	8.2	.30	.39	.25	.30	.80	1.9
DEC												
19...	757	1.10	3490	--	7.6	7.9	.37	.48	.49	.59	.83	1.2
JAN												
31...	761	1.09	1880	--	6.6	7.3	.23	.30	.23	.27	1.1	.97
FEB												
28...	511	.70	1760	--	4.3	4.3	1.2	1.5	1.2	1.5	2.1	3.0
MAR												
19...	265	.40	2320	--	1.7	1.7	1.0	1.3	1.1	1.3	1.6	8.6
APR												
24...	574	.83	2000	--	3.5	3.5	.02	.03	.06	.07	.95	2.3
MAY												
20...	587	.80	1250	--	2.8	4.0	.04	.05	.04	.05	.79	1.2
JUN												
25...	512	.74	1260	--	1.6	1.5	.04	.05	.13	.16	1.7	2.7
JUL												
23...	493	.74	695	--	.00	.00	.00	.00	.00	.00	.90	2.5
AUG												
27...	449	.63	653	--	.18	.20	.00	.00	.00	.00	.59	2.7
SEP												
24...	505	.73	362	--	.00	.00	.02	.03	.01	.01	.63	3.2

DATE	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	PHOS-PHORUS, HYDRO. + ORTHO DISSOL. (MG/L AS P) (00677)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT											
25...	.98	.12	1.1	4.9	5.9	26	--	--	--	.260	.390
NOV											
29...	1.1	1.1	2.2	8.9	10	46	--	--	--	.170	.280
DEC											
19...	1.2	.50	1.7	6.8	9.6	42	--	--	--	.320	.380
JAN											
31...	1.3	.00	1.2	7.9	8.5	38	--	--	--	.350	.360
FEB											
28...	3.3	.90	4.2	7.6	8.5	38	--	--	--	.640	.790
MAR											
19...	2.6	7.1	9.7	4.3	11	50	--	--	--	.310	.770
APR											
24...	.97	1.4	2.4	4.5	5.9	26	--	--	--	.080	.320
MAY											
20...	.83	.37	1.2	3.6	5.2	23	--	--	--	.070	.370
JUN											
25...	1.7	1.1	2.8	3.3	4.3	19	--	--	--	.100	.470
JUL											
23...	.90	1.6	2.5	.90	2.5	11	--	--	--	.030	.460
AUG											
27...	.59	2.1	2.7	.77	2.9	13	--	--	--	.150	.610
SEP											
24...	.65	2.6	3.2	.65	3.2	14	--	--	--	.020	.440

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)
OCT											
25...	1.2	--	15	.3	--	--	--	--	--	--	--
NOV											
29...	.86	--	--	--	7.9	--	--	--	--	--	--
DEC											
19...	1.2	--	--	--	8.7	9400	--	--	--	--	--
JAN											
31...	1.1	--	27	.6	--	--	--	--	--	--	--
FEB											
28...	2.4	--	--	--	33	--	--	--	--	--	--
MAR											
19...	2.4	--	--	--	45	--	--	--	--	--	--
APR											
24...	.98	--	22	--	--	110000	--	--	--	--	--
MAY											
20...	1.1	--	--	--	13	120000	2.99	2.68	.360	.000	861
JUN											
25...	1.4	--	--	--	25	130000	--	--	--	--	--
JUL											
23...	1.4	--	5.8	.6	--	470000	--	--	--	--	--
AUG											
27...	1.9	--	--	--	24	210000	--	--	--	--	--
SEP											
24...	1.4	--	--	--	21	--	--	--	--	--	--

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT												
25...	0900	674	145	367	--	--	--	--	46	65	100	--
NOV												
29...	1125	1820	214	1200	--	--	--	--	68	90	100	--
DEC												
19...	0900	1100	147	635	--	--	--	--	86	89	95	97
JAN												
31...	1130	540	116	272	81	--	--	--	--	--	--	--
FEB												
28...	1130	850	108	370	--	--	--	--	92	99	100	--
MAR												
19...	1015	2940	738	5860	--	59	60	76	97	99	100	--
APR												
24...	1030	1220	418	1370	--	21	45	52	89	100	--	--
MAY												
20...	1100	786	250	531	--	--	--	--	93	93	93	93
JUN												
25...	0915	853	--	--	--	--	--	--	--	--	--	--
JUL												
23...	1030	474	245	314	--	9	13	19	94	--	--	--
AUG												
27...	1230	519	178	249	--	10	12	41	92	92	92	92
SEP												
24...	1130	248	110	74	87	--	--	--	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT											
25...	0900	4	1	3	0	0	<1	8	8	0	2
JAN											
31...	1130	2	0	2	0	0	<1	0	0	0	0
APR											
24...	1030	4	2	2	1	--	<1	0	0	0	0
JUL											
23...	1030	6	2	4	1	--	<1	30	20	10	4

< Less than.

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
OCT											
25...	0	<3	5	5	0	590	10	2	2	0	150
JAN											
31...	0	<3	10	10	0	330	20	30	28	2	150
APR											
24...	--	<3	5	2	3	2600	80	6	4	2	310
JUL											
23...	--	<3	12	9	3	5000	<10	10	10	0	730

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT											
25...	110	40	.1	.1	.0	3	0	3	10	6	4
JAN											
31...	10	140	.0	.0	.0	5	0	5	10	7	<3
APR											
24...	310	5	.0	.0	.0	3	0	3	30	30	5
JUL											
23...	--	<1	.1	.1	.0	2	0	2	70	70	5

DATE	TIME	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)
OCT											
25...	0900	ND	--	ND	--	ND	--	ND	--	ND	--
FEB											
28...	1130	ND	--	ND	--	ND	--	ND	--	ND	--

DATE	DI-AZINON, TOTAL (UG/L) (39570)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)
OCT											
25...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
FEB											
28...	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39343)	MALA-THION, TOTAL (UG/L) (39530)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39531)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL TRI-THION, TOTAL (UG/L) (39790)
OCT										
25...	--	ND	--	ND	--	ND	--	ND	--	ND
FEB										
28...	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	PARA-THION, TOTAL (UG/L) (39540)	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39541)	TOX-APHENE, TOTAL (UG/L) (39400)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39403)	TOTAL TRI-THION (UG/L) (39786)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39787)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)
OCT										
25...	--	ND	--	ND	--	ND	--	.22	ND	ND
FEB										
28...	--	ND	--	ND	--	ND	--	--	--	--

< Less than.
ND Not detected.

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 28,79	SEP 25,79	DEC 19,79	APR 24,80
TIME	1300	1215	0900	1030
TOTAL CELLS/ML	22000	160000	9400	110000
DIVERSITY: DIVISION	1.4	1.1	0.9	1.3
.CLASS	1.4	1.1	0.9	1.3
..ORDER	1.7	1.4	1.1	1.6
...FAMILY	2.1	1.5	1.2	2.2
....GENUS	2.9	2.0	1.2	2.6

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	--	-
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	1000	1
....MICRACTINIUM	--	-	--	-	180	2	36000#	33
...OOCYSTACEAE								
....ANKISTRODESMUS	430	2	--	-	270	3	1000	1
....CHODATELLA	140	1	1200	1	--	-	--	-
....DICHOTOMOCOCCUS	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	2300	10	--	-	--	-	--	-
....GLOEOACTINIUM	--	-	--	-	--	-	12000	11
....KIRCHNERIELLA	2100	10	--	-	180	2	--	-
....NEPHROCYTIUM	--	-	6200	4	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	1200	1	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	2300	10	5000	3	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-
....SCENEDESMUS	860	4	5000	3	--	-	2100	2
....TETRASTRUM	570	3	--	-	--	-	2100	2
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	5000	3	1300	14	4100	4
...PHACOTACEAE								
....PTEROMONAS	140	1	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	8600#	39	100000#	65	7200#	76	12000	11
....MELOSIRA	1000	5	11000	7	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	27000#	25
..PENNALES								
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	--	-	*	0
...NITZSCHIACEAE								
....NITZSCHIA	1300	6	5000	3	88	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	1200	1	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	2300	10	--	-	--	-	--	-
....ANACYSTIS	--	-	16000	10	--	-	11000	10
....GOMPHOSPHAERIA	--	-	--	-	--	-	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	140	1	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	180	2	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

PHYTOPLANKTON ANALYSES

DATE	MAY 20,80		JUN 25,80		JUL 23,80		AUG 27,80	
TIME	1100		0915		1030		1230	
TOTAL CELLS/ML	120000		130000		470000		210000	
DIVERSITY: DIVISION	1.1		1.4		1.4		1.5	
.CLASS	1.1		1.4		1.4		1.5	
..ORDER	1.3		1.7		1.5		1.7	
...FAMILY	2.0		2.1		1.7		2.2	
....GENUS	2.5		2.9		2.1		2.5	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	*	0	--	-	--	-
...COELASTRACEAE								
....COELASTRUM	2200	2	--	-	--	-	4100	2
...MICRACTINIACEAE								
....GOLENKINIA	3800	3	--	-	--	-	--	-
....MICRACTINIUM	6500	6	12000	9	12000	3	15000	7
...OOCYSTACEAE								
....ANKISTRODESMUS	1600	1	1600	1	15000	3	*	0
....CHODATELLA	--	-	--	-	--	-	--	-
....DICHOTOMOCOCCUS	--	-	--	-	18000	4	--	-
....DICTYOSPHAERIUM	2200	2	960	1	--	-	2100	1
....GLOEOACTINIUM	--	-	--	-	--	-	8200	4
....KIRCHNERIELLA	--	-	--	-	18000	4	--	-
....NEPHROCYTIUM	--	-	--	-	--	-	--	-
....OOCYSTIS	*	0	--	-	--	-	8200	4
....SELENASTRUM	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	3000	1	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	34000#	30	10000	8	--	-	13000	6
....CRUCIGENIA	--	-	--	-	--	-	3100	1
....SCENEDESMUS	7500	7	19000	14	15000	3	2100	1
....TETRASTRUM	4300	4	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	1900	1	3000	1	2100	1
...PHACOTACEAE								
....PTEROMONAS	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	46000#	40	46000#	35	250000#	54	89000#	42
....MELOSIRA	--	-	21000#	16	21000	4	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-
..PENNALES								
...FRAGILARIACEAE								
....SYNEDRA	*	0	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	4300	4	4200	3	3000	1	5100	2
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	*	0	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	*	0	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	110000#	23	--	-
....ANACYSTIS	2200	2	3200	2	--	-	--	-
....GOMPHOSPHAERIA	--	-	10000	8	--	-	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	57000#	27
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	*	0	--	-	--	-
....TRACHELOMONAS	--	-	*	0	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	930	830	880	970	1190	960	830	900	780	580	820	800
2	940	650	1030	970	1150	990	830	900	600	460	790	790
3	950	540	1070	980	1140	1020	770	890	700	480	790	800
4	950	560	1060	990	1120	1040	770	900	810	520	790	820
5	950	660	1020	1010	1160	1090	810	880	860	570	850	800
6	950	790	1020	1020	1130	1020	760	870	630	640	860	730
7	950	860	1010	1060	1120	1070	750	870	480	650	860	730
8	950	890	980	1070	1120	1020	770	870	460	670	850	700
9	970	910	1020	1090	1100	1020	840	860	570	720	850	720
10	970	950	1020	1140	1090	990	890	870	690	740	720	800
11	970	960	1030	1140	1070	830	930	880	740	770	760	760
12	980	980	1040	1170	1100	820	960	870	770	800	810	750
13	970	1000	1050	1140	1110	820	960	870	790	800	910	720
14	980	1020	1040	1140	1110	760	980	880	770	800	950	740
15	920	1010	1060	1100	1100	760	990	880	720	810	920	750
16	980	1010	1100	1100	1120	760	980	880	730	810	810	770
17	980	1020	1100	1050	1120	680	960	880	760	800	780	780
18	990	1030	1120	1040	1120	550	970	910	780	770	850	800
19	970	1030	1140	1020	1130	530	980	920	800	800	800	800
20	970	1040	1120	1010	1140	580	980	930	840	830	810	840
21	970	1010	1070	1010	1120	630	970	920	860	830	810	780
22	970	1010	1040	1000	930	630	970	870	850	830	790	800
23	970	1010	1020	1000	660	650	970	860	830	830	730	770
24	970	1000	1000	1000	660	680	960	860	780	820	730	830
25	980	1020	990	990	700	690	950	860	780	790	750	860
26	980	1030	970	990	730	720	940	860	760	800	760	900
27	980	1030	980	1000	780	720	950	860	760	820	730	890
28	980	1040	970	1020	790	760	960	860	780	840	790	900
29	980	1050	970	1040	830	770	950	860	820	860	840	880
30	980	1060	970	1080	---	820	940	860	870	860	790	830
31	980	---	960	1100	---	850	---	860	---	870	800	---
MEAN	966	933	1030	1050	1020	815	909	879	746	747	810	795

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	6.0	.0	1.0	.0	.0	6.0	15.0	19.0	23.0	21.0	20.0
2	14.0	6.0	.0	1.0	.0	.0	6.0	15.0	20.0	23.0	23.0	19.0
3	14.0	5.0	3.0	.0	.0	.0	6.0	16.0	19.0	23.0	24.0	21.0
4	12.0	6.0	2.0	.0	.0	1.0	5.0	17.0	21.0	22.0	21.0	20.0
5	10.0	5.0	1.0	1.0	.0	.0	5.0	18.0	21.0	24.0	22.0	19.0
6	10.0	4.0	2.0	.0	.0	.0	7.0	17.0	21.0	26.0	23.0	22.0
7	11.0	4.0	1.0	.0	.0	.0	8.0	14.0	22.0	27.0	25.0	22.0
8	11.0	3.0	.0	.0	.0	1.0	9.0	11.0	19.0	27.0	25.0	24.0
9	10.0	3.0	1.0	.0	.0	1.0	7.0	12.0	19.0	26.0	24.0	19.0
10	9.0	2.0	1.0	.0	.0	1.0	7.0	12.0	18.0	27.0	22.0	18.0
11	10.0	2.0	.0	.0	.0	1.0	8.0	12.0	21.0	28.0	22.0	19.0
12	10.0	2.0	.0	.0	.0	2.0	3.0	13.0	21.0	27.0	22.0	19.0
13	8.0	2.0	.0	1.0	.0	1.0	8.0	12.0	22.0	27.0	21.0	20.0
14	7.0	3.0	.0	1.0	.0	1.0	8.0	14.0	23.0	26.0	23.0	20.0
15	7.0	4.0	.0	1.0	.0	2.0	7.0	12.0	22.0	27.0	21.0	17.0
16	8.0	5.0	.0	1.0	.0	3.0	8.0	14.0	20.0	26.0	20.0	17.0
17	9.0	5.0	.0	1.0	.0	2.0	9.0	13.0	21.0	25.0	19.0	13.0
18	10.0	5.0	.0	.0	.0	1.0	11.0	12.0	22.0	25.0	22.0	14.0
19	11.0	6.0	1.0	1.0	1.0	3.0	12.0	12.0	22.0	29.0	23.0	16.0
20	13.0	5.0	1.0	1.0	1.0	4.0	14.0	14.0	21.0	25.0	24.0	17.0
21	12.0	5.0	1.0	1.0	2.0	4.0	16.0	15.0	20.0	25.0	22.0	15.0
22	9.0	4.0	.0	1.0	1.0	4.0	17.0	17.0	22.0	22.0	23.0	17.0
23	6.0	2.0	1.0	1.0	1.0	4.0	17.0	18.0	21.0	22.0	21.0	14.0
24	5.0	2.0	.0	1.0	1.0	3.0	15.0	19.0	23.0	23.0	22.0	14.0
25	6.0	2.0	.0	1.0	.0	3.0	13.0	20.0	24.0	24.0	24.0	13.0
26	7.0	3.0	.0	.0	1.0	4.0	14.0	20.0	26.0	21.0	23.0	11.0
27	8.0	2.0	1.0	.0	1.0	3.0	13.0	21.0	26.0	22.0	19.0	12.0
28	8.0	1.0	1.0	.0	.0	5.0	13.0	22.0	25.0	22.0	20.0	15.0
29	9.0	.0	1.0	.0	.0	4.0	13.0	22.0	23.0	24.0	21.0	16.0
30	9.0	.0	2.0	.0	---	4.0	15.0	15.0	---	24.0	22.0	16.0
31	9.0	---	2.0	.0	---	5.0	---	18.0	---	23.0	22.0	---
MEAN	9.5	3.5	.5	.5	.5	2.0	10.0	15.5	21.5	24.5	22.0	17.5

06486000 MISSOURI RIVER AT SIOUX CITY, IA
(National stream-quality accounting network station)

LOCATION.--Lat 42°29'10", long 96°24'47", in NW¼SE¼ sec.16, T.29 N., R.9 E., sixth principal meridian, Dakota County, NE, Hydrologic Unit 10230001, on right bank on upstream side of bridge on U.S. Highway 77 at South Sioux City, NE, 2.0 mi (3.2 km) downstream from Big Sioux River, and at mile 732.3 (1,178.3 km).

DRAINAGE AREA.--314,600 mi² (814,800 km²), approximately.

PERIOD OF RECORD.--October 1897 to current year in reports of Geological Survey. Prior to October 1928 and October 1931 to September 1938, monthly discharges only published in WSP 1310. January 1879 to December 1890 (monthly discharges only) in House Document 238, 73rd Congress, 2d session, Missouri River. Gage-height records collected in this vicinity September 1878 to December 1899 are contained in reports of Missouri River Commission and since July 1889 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 716: 1929-30. WSP 876: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,056.98 ft (322.168 m) National Geodetic Vertical Datum of 1929. Sept. 2, 1878, to Dec. 31, 1905, nonrecording gages at various locations within 1.7 mi (2.7 km) of present site and at various datums. Jan. 1, 1906, to Feb. 14, 1935, nonrecording gage, and Feb. 15, 1935, to Sept. 30, 1969, water-stage recorder at present site at datum 19.98 ft (6.090 m) higher, and Oct. 1, 1969, to Sept. 30, 1970, at datum 20.00 ft (6.096 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by upstream main-stem reservoirs. National Weather Service gage height telemeter at station.

AVERAGE DISCHARGE.--83 years, 32,070 ft³/s (908.2 m³/s), 23,230,000 acre-ft/yr (28,600 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 441,000 ft³/s (12,500 m³/s) Apr. 14, 1952, gage height, 24.28 ft (7.401 m), datum then in use; minimum, 2,500 ft³/s (70.8 m³/s) Dec. 29, 1941; minimum gage height, 9.00 ft (2.743 m) Jan. 8, 1980, based on gage reading at site 14 mi (22 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 44,000 ft³/s (1,250 m³/s) Oct. 31, gage height, 20.53 ft (6.258 m); minimum daily, 13,800 ft³/s (391 m³/s) Jan. 8; minimum gage height, 9.00 ft (2.743 m) Jan. 8, based on gage reading at site 14 mi (22 km) downstream.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39700	39900	39800	24100	17000	15900	33100	32300	32800	32400	37300	36900
2	39800	37600	40000	24100	18000	17700	32300	32300	33300	32900	38100	36500
3	40000	38500	41200	23800	18500	18900	33200	32100	33300	33300	38500	35400
4	40100	38900	40400	23200	19000	19700	33000	32200	31200	33200	39000	35400
5	39900	40000	38600	23700	19900	17000	32500	32600	30100	33300	38500	35100
6	39600	41400	35800	23500	20000	16000	33000	32400	29900	33200	38200	34800
7	39600	40800	33800	17200	20100	16500	32600	32500	32100	32800	38400	34400
8	39700	40100	30700	13800	19900	16500	31300	32600	32600	32900	38500	34200
9	39800	39300	28300	20600	19700	18400	30700	32700	31300	33300	39700	34200
10	39700	38400	27000	20000	19000	19200	30400	32700	31200	33700	41400	35200
11	39600	39100	27100	21300	19400	18000	31300	32600	31000	34400	42000	36600
12	39400	39100	25900	19000	18400	17800	32200	33000	31100	34700	39800	36800
13	39600	38900	26400	20900	19000	16200	32800	32700	31400	34500	36000	36600
14	39300	38900	26800	25100	20500	14100	33500	32200	31600	34700	34700	36800
15	39200	39800	26700	24300	19900	17500	33000	31700	32000	35800	36100	36800
16	39200	40000	25500	24200	18700	18700	32700	31500	32100	38700	38600	36700
17	39300	39700	25700	23700	18400	18800	32600	31700	32300	38200	38800	36500
18	39500	39900	27100	23000	18600	18900	32700	32000	32000	38000	36000	36300
19	40100	40100	27900	23200	20600	20700	33000	32200	31900	37800	35000	36700
20	39800	40000	25200	22800	20300	23500	33000	32400	32000	38100	35200	37900
21	39800	40400	24400	22500	19900	26200	32900	32200	32000	38000	35200	38700
22	40100	40300	24200	22600	20600	29000	32900	32000	32200	37800	34700	38300
23	39300	39200	24400	21300	21800	31900	32900	31500	32400	37400	34500	37400
24	38200	39400	24300	21400	20300	33200	33000	31300	32100	37500	34500	35600
25	38500	39800	23900	22400	19200	33000	33200	31400	32200	38300	34400	35300
26	38800	40200	24400	19900	17600	33100	33000	31500	32100	38000	35100	35300
27	39300	40700	24200	17700	19000	33000	32600	33500	32200	37400	35700	36800
28	40000	40400	24200	17000	19300	32600	32400	32000	31800	37400	34500	38500
29	40000	38900	24200	16500	17900	32900	32200	32100	31200	37100	35000	38500
30	41600	38800	24100	16500	---	33400	32300	37300	31000	37100	36100	38500
31	43500	---	24000	16500	---	33200	---	37200	---	37000	36300	---
TOTAL	1232000	1188700	886200	655800	560500	715500	976500	1008400	954400	1108900	1145800	1092700
MEAN	39740	39620	28590	21150	19330	23080	32550	32530	31810	35770	36960	36420
MAX	43500	41400	41200	25100	21800	33400	33500	37300	33300	38700	42000	38700
MIN	38200	37800	23900	13800	17000	14100	30400	31300	29900	32400	34400	34200
AC-FT	2444000	2358000	1758000	1301000	1112000	1419000	1937000	2000000	1893000	2200000	2273000	2167000

CAL YR 1979 TOTAL 12938300 MEAN 35450 MAX 50100 MIN 15000 AC-FT 25660000
WTR YR 1980 TOTAL 11525400 MEAN 31490 MAX 43500 MIN 13800 AC-FT 22860000

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in floodflow analyses.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain, but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft^3/s)
		Deadman Creek basin					
06358520	Deadman Creek tributary near Mobridge, SD	Lat 45°28'15", long 100°29'54", in NW¼ sec.1, T.17 N., R.29 E., Dewey County, Hydrologic Unit 10130102, at culvert on county highway, 5.5 miles (8.8 km) southwest of Mobridge.	0.30	1956-80[a]	6- 2-80	8.73	109
		Moreau River basin					
06358600	South Fork Moreau River tributary near Redig, SD	Lat 45°11'55", long 103°34'05", in SE¼SE¼ sec.1, T.14 N., R.4 E., Butte County, Hydrologic Unit 10130304, at culvert on former U.S. Highway 85, 5 miles (8 km) south of Redig, 26.2 miles (42.2 km) south of Buffalo.	2.33	1956, 1958-80[a]	8-16-80	3.35	150
		Cheyenne River basin					
06396200	Fiddle Creek near Edgemont, SD	Lat 43°18'16", long 103°59'46", in SE¼ sec.33, T.8 S., R. 1 E., Fall River County, Hydrologic Unit 10120106, at culvert on U.S. Highway 18 and 85A, 9 miles (14 km) west of Edgemont.	.64	1956-80[a]	6-15-80	7.89	275
06396300	Cottonwood Creek tributary near Edgemont, SD	Lat 43°17'48", long 103°52'02", in SW¼ sec.3, T.9 S., R.2 E., Fall River County, Hydrologic Unit 10120106, at culvert on U.S. Highway 18 and 85A, 2.5 miles (4.0 km) west of Edgemont.	.09	1956-80[a]	6-15-80	4.33	48
06403800	Battle Creek tributary near Keystone, SD	Lat 43°55'28", long 103°27'44", in NW¼NE¼NE¼ sec.36, T.1 S., R.5 E., Pennington County, Hydrologic Unit 10120109, at culvert on U.S. Highway 16, 2.8 miles (4.5 km) northwest of Keystone.	.63	1956-80[a]	1980	(b)	<1.0
06406900	Palmer Creek near Hill City, SD	Lat 43°56'12", long 103°30'36", in NE¼SE¼NW¼ sec.27, T.1 S., R.5 E., Pennington County, Hydrologic Unit 10120109, at culvert on U.S. Highway 16, 3.0 miles (4.8 km) east of Hill City.	13.3	1956-80[a]	5- -56	4.22	[c]97
					6- 4-57	4.58	[c]117
					7- -61	4.11	[c]86
					6-16-62	7.55	[c]385
					6- -63	3.70	[c]58
					5-25-65	4.82	[c]140
					6-12-67	3.62	[c]53
					6- 9-68	3.12	[c]14
					7-17-69	6.29	[c]265
					4-23-70	6.03	[c]240
					5-10-71	4.06	[c]84
					5-28-73	4.19	[c]93
					7-18-74	3.73	[c]59
					6-15-76	4.30	[c]103
					8- 8-77	3.96	[c]74
					5-30-78	4.01	[c]67
					7-15-79	3.49	[c]38
					5- -80	(b)	[d]7.0
06437100	Boulder Creek near Deadwood, SD	Lat 44°23'28", long 103°39'38", in NE¼SW¼ sec.17, T.5 N., R.4 E., Lawrence County, Hydrologic Unit 10120202, at culvert on U.S. Highway 14A, 3.5 miles (5.6 km) east of Deadwood.	1.32	1956-80[a]	1980	(b)	[d]<5.0

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations--Continued

					Annual maximum		
Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Date	Gage height (feet)	Discharge (ft^3/s)
		Cheyenne River basin - Continued					
06439050	Cherry Creek tributary near Avance, SD	Lat 44°48'33", long 102°03'18", in SW¼ sec.21, T.10 N., R.17 E., Meade County, Hydrologic Unit 10120113, at culvert on State Highway 73, 12.5 miles (20.1 km) southeast of Avance.	0.60	1956-80[a]	8-20-80	6.27	160
06439080	Cherry Creek tributary No. 3 near Avance, SD	Lat 44°51'03", long 102°03'36", in SW¼ sec.3, T.10 N., R.17 E., Meade County, Hydrologic Unit 10120113, at bridge on State Highway 73, 11 miles (17.7 km) southeast of Avance.	4.58	1956-80[a]	6- 4-80	3.0	42
06439100	Beaver Creek near Faith, SD	Lat 44°56'21", long 102°02'37", in SW¼ sec.3, T.11 N., R.17 E., Meade County, Hydrologic Unit 10120113, at bridge on State Highway 73, 6 miles (10 km) south of Faith.	37.1	1956-80[a]	1980	(b)	<4.0
		Mush Creek basin					
06441650	Mush Creek near Pierre, SD	Lat 44°20'13", long 100°12'42", in NE¼ sec.16, T.110 N., R.78 W., Hughes County, Hydrologic Unit 10140101, at bridge on State Highway 34, 7.5 miles (12.1 km) east of Pierre.	14.2	1956-80[a]	8-20-80	(b)	[d]15
		Unnamed Missouri River tributary					
06442050	Missouri River tributary near DeGrey, SD	Lat 44°17'45", long 99°58'58", in SW¼ sec.28, T.110 N., R.76 W., Hughes County, Hydrologic Unit 10140101, at culvert on State Highway 34, 3.2 miles (5.1 km) northwest of DeGrey.	1.73	1956-80[a]	8-20-80	2.25	115
		Medicine Creek basin					
06442350	North Fork Medicine Creek near Vivian, SD	Lat 43°57'06", long 100°19'25", in SW¼ sec.28, T.106 N., R.79 W., Lyman County, Hydrologic Unit 10140104, at bridge on U.S. Highway 83, 2.5 miles (4.0 km) northwest of Vivian.	47.0	1956-80[a]	8-16-80	(b)	[d]30
06442400	Medicine Creek tributary No. 2 near Vivian, SD	Lat 44°02'03", long 100°19'28", in NE¼ sec.32, T.107 N., R.79 W., Lyman County, Hydrologic Unit 10140104, at culvert on U.S. Highway 83, 8 miles (13 km) northwest of Vivian.	9.21	1956-80[a]	8- -80	(b)	[d]5.0
		Crow Creek basin					
06442960	Smith Creek tributary near Gann Valley, SD	Lat 44°01'34", long 98°43'41", in NE¼SE¼ sec.34, T.107 N., R.66 W., Jerauld County, Hydrologic Unit 10140105, at culvert on county highway, 8.7 miles (14.0 km) southwest of Wessington Springs and 13.0 miles (20.9 km) east of Gann Valley.	5.85	1972-80[a]	7-12-79 6-27-80	(b) 3.82	[d]2.5 25
		White River basin					
06446300	Big Hollow Creek tributary near Scenic, SD	Lat 43°42'25", long 102°31'15", in SE¼SE¼ sec.11, T.4 S., R.13 E., Pennington County, Hydrologic Unit 10140201, at culvert on county road, 4.9 miles (7.9 km) south of Scenic.	2.71	1968, 1970-76, 1979[e]	6-18-79	11.73	[c]675

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (mi²)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (ft³/s)
		White River basin - Continued					
06446400	Cain Creek tributary at Imlay, SD	Lat 43°42'59", long 102°23'23", in SE¼NW¼ sec.12, T.4 S., R.14 E., Pennington County, Hydrologic Unit 10140201, at bridge on State Highway 40, 0.5 mile (0.8 km) east of Imlay.	15.8	1956-80[a]	6-15-80	6.03	670
06446550	White River tributary near Interior, SD	Lat 43°44'51", long 101°56'50", in SE¼ sec.27, T.3 S., R.18 E., Jackson County, Hydrologic Unit 10140202, in Badlands National Park, at culvert on U.S. Highway 16A, 2.3 miles (3.7 km) northeast of Interior.	.32	1956-80[a]	7-12-80	8.83	575
06447490	Little White River tributary near Martin, SD	Lat 43°10'20", long 101°41'02", in SE¼SW¼ sec.15, T.37 N., R.37 W., Bennett County, Hydrologic Unit 10140203, at culvert on U.S. Highway 18, 2.3 miles (3.7 km) east of Martin.	[f]8.9	1971-80[a]	1980	(b)	[d]20
06449700	Little Oak Creek near Mission, SD	Lat 43°19'45", long 100°42'33", in NW¼ sec.25, T.39 N., R.29 W., Todd County, Hydrologic Unit 10140203, at culvert on U.S. Highway 83, 3.2 miles (5.1 km) northwest of Mission.	2.58	1956-80[a]	1980	(b)	[d]15
06451750	Cottonwood Creek tributary near Winner, SD	Lat 43°23'11", long 100°01'13", in NW¼ sec.24, T.99 N., R.78 W., Tripp County, Hydrologic Unit 10140204, at culvert on U.S. Highway 18, 7.5 miles (12.1 km) west of Winner.	[f]4.0	1971-80[a]	6- 7-80	3.79	40
		James River basin					
06471050	Elm River tributary near Leola, SD	Lat 45°50'40", long 98°46'03", in NE¼SE¼ sec.3, T.127 N., R.66 W., McPherson County, Hydrologic Unit 10160004, at culvert on county highway, 12.2 miles (19.6 km) northeast of Leola.	18.0	1956-80[a]	3- -80	(b)	[d]5.0
06471400	Willow Creek tributary near Leola, SD	Lat 45°44'10", long 98°45'45", in SW¼ sec.11, T.126 N., R.66 W., McPherson County, Hydrologic Unit 10160004, at culvert on former State Highway 10, 8.5 miles (13.7 km) northeast of Leola.	6.69	1956-80[a]	3- -80	[g]1.76	[d]10
06472200	Mud Creek tributary near Groton, SD	Lat 45°26'37", long 98°02'22", in SW¼ sec.22, T.123 N., R.60 W., Brown County, Hydrologic Unit 10160005, at culvert on U.S. Highway 12, 3.2 miles (5.1 km) east of Groton.	56.7	1960-69, 1974-80[a]	3- -80	[g]3.14	[d]15
06472250	Mud Creek tributary No. 2 near Groton, SD	Lat 45°26'36", long 98°02'52", in SE¼ sec.21, T.123 N., R.60 W., Brown County, Hydrologic Unit 10160005, at culvert on U.S. Highway 12, 2.7 miles (4.3 km) east of Groton.	75.8	1960-80[a]	6-13-80	3.06	22
06473300	Preachers Run tributary at Ipswich, SD	Lat 45°27'08", long 99°01'45", in SE¼ sec.21, T.123 N., R.68 W., Edmunds County, Hydrologic Unit 10160008, at culvert on county highway, 0.3 mile (0.5 km) north of U.S. Highway 12, at Ipswich.	7.88	1971-80[a]	4- -80	(b)	[d]3.0

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Annual maximum Gage height (feet)	Annual maximum Discharge (ft^3/s)
		James River basin - Continued					
06473350	South Fork Snake Creek tributary near Seneca, SD	Lat 45°03'00", long 99°23'36", in SE¼NE¼ sec.9, T.118 N., R.71 W., Faulk County, Hydrologic Unit 10160008, at culvert on U.S. Highway 212, 5.3 miles (8.5 km) east of Seneca.	4.54	1971-80[a]	1980	--	(h)
06473400	North Fork Snake Creek tributary near Wecota, SD	Lat 45°09'26", long 99°07'26", in NE¼NE¼ sec.3, T.119 N., R.69 W., Faulk County, Hydrologic Unit 10160008, at culvert on county highway, 1.1 miles (1.8 km) south of Wecota.	2.69	1971-79[e]	6-20-79	4.25	[i]37
06473820	Shaefer Creek near Orient, SD	Lat 44°46'46", long 99°02'39", in NW¼NW¼ sec.17, T.115 N., R.68 W., Hand County, Hydrologic Unit 10160009, on downstream side of bridge on county highway, 8.5 miles (13.7 km) southeast of Orient.	51.3	1956-80[a]	4- 8-80	1.82	10
06473850	Shaefer Creek tributary near Orient, SD	Lat 44°43'49", long 98°59'17", in SE¼NE¼ sec.34, T.115 N., R.68 W., Hand County, Hydrologic Unit 10160009, at culvert on State Highway 45, 13 miles (21 km) southeast of Orient.	5.17	1956-80[a]	6- -80	(b)	[d]<3.0
06473880	Shaefer Creek tributary near Miller, SD	Lat 44°42'20", long 98°59'17", in NE¼ sec.10, T.114 N., R.68 W., Hand County, Hydrologic Unit 10160009, at culvert on State Highway 45, 13 miles (21 km) north of Miller.	5.95	1956-80[a]	6- 4-80	2.73	<1.0
06475850	Foster Creek tributary near Carpenter, SD	Lat 44°37'59", long 98°03'42", in SE¼SE¼ sec.32, T.114 N., R.60 W., Spink County, Hydrologic Unit 10160006, at culvert on State Highway 28, 7.3 miles (11.7 km) west of Carpenter.	4.93	1972-80[a]	7- 4-80	3.92	26
06478280	South Branch Dry Creek near Parkston, SD	Lat 43°21'22", long 97°49'35", in NW¼ sec.33, T.99 N., R.59 W., Hutchinson County, Hydrologic Unit 10160011, at bridge on county highway, 8.3 miles (13.4 km) southeast of Parkston.	25.8	1956-80[a]	3- -80	[g]2.39	[d]5.0
06478300	Dry Creek near Parkston, SD	Lat 43°22'18", long 97°49'23", in SE¼ sec.21, T.99 N., R.59 W., Hutchinson County, Hydrologic Unit 10160011, at bridge on county highway, 8.5 miles (13.7 km) southeast of Parkston.	99.2	1956-80[a]	3- -80	[g]2.51	[d]2.0
		Vermillion River basin					
06478820	Saddlerock Creek tributary near Beresford, SD	Lat 43°12'21", long 96°45'51", in NE¼NW¼NW¼ sec.21, T.97 N., R.50 W., Lincoln County, Hydrologic Unit 10170102, at culvert on county highway, 9 miles (14 km) north of Beresford.	2.22	1956-80[a]	3- -80	[g]3.77	[d]10
06478840	Saddlerock Creek near Beresford, SD	Lat 43°12'55", long 96°49'33", in SE¼SE¼ sec.14, T.97 N., R.51 W., Lincoln County, Hydrologic Unit 10170102, at bridge on county highway, 9.5 miles (15.3 km) northwest of Beresford.	23.1	1956-70, 1972-80[a]	4- 3-80	3.50	49

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations--Continued

					Annual maximum		
Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Date	Gage height (feet)	Discharge (ft^3/s)
		Big Sioux River basin					
06479750	Peg Munky Run near Estelline, SD	Lat 44°34'22", long 96°51'15", in N½ sec.29, T.113 N., R.50 W., Deuel County, Hydrologic Unit 10170202, at bridge on State Highway 28, 2.5 miles (4.0 km) east of Estelline.	25.2	1956-80[a]	5-28-78 6- 3-80	6.84 7.59	[i]670 1,200
06479800	North Deer Creek near Estelline, SD	Lat 44°27'44", long 96°47'13", in SE¼ sec.35, T.112 N., R.50 W., Brookings County, Hydrologic Unit 10170202, at bridge on U.S. Highway 77, 9.8 miles (15.8 km) southeast of Estelline.	48.3	1956-80[a]	6-25-80	7.45	620
06479950	Deer Creek near Brookings, SD	Lat 44°23'03", long 96°37'19", in SW¼ sec.29, T.111 N., R.48 W., Brookings County, Hydrologic Unit 10170202, at culvert on county highway, 9.8 miles (15.8 km) northeast of Brookings.	4.04	1956-80[a]	6-25-80	9.57	540

< Less than.
‡ Operated as a continuous-record gaging station.
a Discontinued Sept. 30, 1980.
b Peak stage did not reach bottom of gage.
c Not previously published.
d Estimated.
e Discontinued Sept. 30, 1979.
f Approximate.
g Backwater from ice.
h No evidence of any flow during the water year.
i Revised.

Revisions to records published for crest-stage partial-record stations discontinued prior to September 30, 1980

06359850 Elm Creek tributary near Dupree, SD — Drainage area.--4.16 mi^2 (revised).

06360350 Little Moreau River tributary near Firesteel, SD — Drainage area.--2.09 mi^2 (revised).

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06334500 - LITTLE MISSOURI R AT CAMP CROOK SD (LAT 45 32 49 LONG 103 58 23)					
OCT , 1979					
03...	0900	2.4	8.0	--	1700
NOV					
06...	1000	5.1	1.5	--	2000
DEC					
04...	0930	7.5	.5	--	2650
JAN , 1980					
07...	1500	3.4	.0	--	3000
FEB					
05...	0925	2.2	.0	--	2800
MAR					
04...	1000	6.6	.0	--	2450
APR					
08...	1015	25	5.0	--	1400
MAY					
06...	1010	3.3	14.5	--	1980
JUN					
03...	0945	3.2	18.5	--	1780
JUL					
01...	0930	.86	20.0	--	2180
AUG					
06...	1000	.42	18.5	--	1830
SEP					
09...	1000	.87	13.0	--	1820
06355500 - NORTH FORK GRAND R NEAR WHITE BUTTE SD (LAT 45 48 10 LONG 102 21 45)					
OCT , 1979					
24...	--	5.4	7.0	17.0	3000
NOV					
20...	0940	7.1	.0	-1.0	3050
DEC					
19...	1100	5.3	.0	2.0	3700
JAN , 1980					
15...	1000	1.6	.0	-3.5	4400
FEB					
13...	0940	.82	.0	-5.0	--
MAR					
12...	1010	4.4	.0	-.5	3350
APR					
09...	0755	12	9.0	7.5	1800
MAY					
06...	1445	3.7	18.0	17.0	2800

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06356000 - SOUTH FORK GRAND R AT BUFFALO SD (LAT 45 34 34 LONG 103 32 38)					
OCT , 1979					
03...	1030	2.0	7.5	--	2050
NOV					
06...	1200	2.9	3.0	--	1920
DEC					
04...	1115	3.2	.0	--	2200
JAN , 1980					
07...	1130	1.0	.0	--	2100
FEB					
05...	1140	1.8	.0	--	2390
MAR					
04...	1150	3.6	.0	--	--
APR					
08...	1200	4.3	5.5	--	--
MAY					
06...	1215	2.7	15.5	--	2280
JUN					
03...	1205	2.0	21.0	--	1880
JUL					
01...	1120	1.7	--	--	2180
AUG					
06...	1140	1.3	19.5	--	2380
SEP					
09...	1200	1.6	14.5	--	1880
06356500 - SOUTH FORK GRAND R NEAR CASH SD (LAT 45 38 56 LONG 102 36 27)					
OCT , 1979					
24...	1155	13	10.0	17.0	2500
NOV					
20...	1125	11	.0	-1.0	2270
DEC					
19...	1310	5.4	.0	7.0	3500
JAN , 1980					
15...	1220	1.3	.0	3.0	4200
FEB					
13...	1035	.58	.0	-5.0	5200
MAR					
12...	1210	6.1	.0	-.5	2600
APR					
09...	0905	25	6.5	13.5	1750
MAY					
06...	1320	12	17.5	16.5	2550
JUN					
04...	1215	6.9	22.5	25.0	2800
JUL					
02...	1320	6.3	19.0	32.0	2750
30...	1205	4.2	24.0	35.0	3600
AUG					
27...	1130	28	14.0	7.5	--
SEP					
16...	1305	8.8	13.5	11.5	2320

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06359500 - MOREAU R NEAR FAITH SD (LAT 45 11 52 LONG 102 09 22)					
OCT , 1979					
23...	1230	10	8.0	15.0	2350
NOV					
19...	1340	10	4.0	11.0	2360
DEC					
18...	1310	4.8	.0	6.0	3400
JAN , 1980					
14...	1405	.49	.0	2.0	4500
MAR					
11...	1505	5.4	.0	5.0	3150
APR					
08...	1315	26	9.5	8.0	1650
MAY					
07...	0725	10	9.0	4.0	2400
JUN					
05...	0905	2.7	19.0	18.5	3100
JUL					
03...	0925	2.3	23.5	--	1780
AUG					
28...	0750	4.3	15.5	--	--
SEP					
17...	0830	2.3	11.2	6.5	3520
06392900 - BEAVER CR AT MALLO CAMP NEAR FOUR CORNERS WY (LAT 44 05 04 LONG 104 03 41)					
OCT , 1979					
09...	1225	2.5	4.5	--	441
DEC					
04...	1205	2.3	.0	--	508
FEB , 1980					
25...	1300	2.7	2.0	--	450
APR					
28...	1430	2.9	12.0	--	390
JUN					
18...	1415	2.8	16.0	--	480
JUL					
23...	1400	2.4	18.0	--	445
24...	--	--	13.5	--	430
AUG					
26...	1445	2.3	10.0	--	320
06392950 - STOCKADE BEAVER CR NEAR NEWCASTLE WY (LAT 43 51 30 LONG 104 06 23)					
OCT , 1979					
09...	0945	13	7.5	--	2070
DEC					
04...	0930	12	1.0	--	2320
FEB , 1980					
06...	0940	12	2.5	--	2230
25...	1000	13	2.0	--	2040
APR					
28...	1210	11	11.0	--	2150
JUN					
18...	1255	8.8	--	--	2300
JUL					
23...	1115	9.3	18.0	--	2230
AUG					
26...	1330	12	14.0	--	1680

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06395000 - CHEYENNE R AT EDGEMONT SD (LAT 43 18 20 LONG 103 49 14)					
OCT , 1979					
02...	0930	6.4	9.5	--	5000
NOV					
06...	0900	19	.5	--	5400
DEC					
04...	1000	5.2	.0	--	130
JAN , 1980					
08...	1045	7.7	.0	--	730
FEB					
05...	0955	8.6	.0	--	--
28...	0915	140	.0	--	1280
MAR					
19...	0930	77	.5	--	3100
APR					
08...	1315	57	11.0	--	3960
MAY					
05...	1825	9.6	21.0	--	4950
JUN					
03...	1125	27	21.0	--	3550
JUL					
08...	0935	.97	21.0	--	4475
AUG					
05...	1615	.17	29.0	--	5525
SEP					
15...	1710	.85	22.0	--	4450
06400000 - HAT CR NEAR EDGEMONT SD (LAT 43 14 46 LONG 103 35 16)					
FEB , 1980					
05...	1115	224	.0	--	--
26...	1550	122	.5	--	493
MAR					
19...	1215	1.9	4.0	--	1030
APR					
08...	1605	42	9.5	--	1330
MAY					
06...	1125	.46	18.5	--	3170
JUN					
02...	1640	.10	24.0	--	2680
06400497 - CASCADE SPRINGS NEAR HOT SPRINGS SD (LAT 43 20 20 LONG 103 33 08)					
OCT , 1979					
03...	0830	20	20.0	--	2900
NOV					
06...	1330	21	21.5	--	2920
DEC					
04...	1545	21	20.0	--	2800
JAN , 1980					
08...	1430	21	21.0	--	2500
FEB					
05...	1315	20	21.0	--	--
APR					
08...	1900	19	20.0	--	2800
JUN					
03...	1410	22	19.0	--	2950
JUL					
08...	1310	22	20.5	--	2510
AUG					
06...	0935	20	20.5	--	2460
SEP					
16...	1130	18	19.5	--	2570

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06402000 - FALL R AT HOT SPRINGS SD (LAT 43 25 50 LONG 103 28 33)					
OCT , 1979					
03...	1015	22	22.5	--	2000
NOV					
06...	1500	21	23.0	--	1340
DEC					
05...	0845	22	23.0	--	1560
JAN , 1980					
08...	1600	25	19.0	--	--
FEB					
06...	0845	22	22.0	--	--
APR					
09...	1025	25	24.0	--	1263
MAY					
07...	0830	20	22.5	--	1330
JUN					
03...	1605	21	26.0	--	1450
JUL					
09...	0625	18	26.0	--	1268
AUG					
04...	1810	18	25.5	--	1268
SEP					
16...	0940	24	22.0	--	1230
06402500 - BEAVER CR NEAR BUFFALO GAP SD (LAT 43 27 56 LONG 103 18 22)					
OCT , 1979					
03...	1245	1.4	12.5	--	3140
NOV					
07...	0900	9.1	5.0	--	2850
DEC					
05...	1045	11	5.5	--	2300
JAN , 1980					
09...	1030	12	.0	--	2950
FEB					
06...	1045	12	4.0	--	--
28...	1100	11	6.5	--	2600
APR					
14...	1025	10	9.0	--	2870
MAY					
07...	1050	.81	12.5	--	3200
JUN					
04...	1130	.59	17.0	--	3370
JUL					
09...	1045	.39	22.5	--	2970
AUG					
06...	1150	.31	19.5	--	3130
SEP					
16...	1315	.43	13.0	--	3200

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06404000 - BATTLE CR NEAR KEYSTONE SD (LAT 43 52 18 LONG 103 20 09)					
OCT , 1979					
04...	1415	1.1	13.5	--	--
31...	1000	2.7	3.5	--	350
DEC					
10...	1630	3.8	1.0	--	300
JAN , 1980					
03...	1505	.60	1.0	--	390
FEB					
07...	1545	.41	.5	--	575
MAR					
10...	1530	1.7	.5	--	357
APR					
15...	1615	9.5	5.0	--	244
MAY					
08...	1635	3.4	17.0	--	240
JUN					
05...	1615	2.3	21.0	--	250
JUL					
10...	1630	.31	26.0	--	234
SEP					
05...	1425	.24	21.5	--	284
06404998 - GRACE COOLIDGE CR NR GAME LODGE NR CUSTER (LAT 43 45 40 LONG 103 21 49)					
OCT , 1979					
04...	1030	5.5	--	--	165
31...	1200	1.3	4.0	--	--
DEC					
10...	1315	1.1	4.0	--	225
JAN , 1980					
03...	1100	.74	.0	--	240
FEB					
07...	1215	.62	.0	--	230
MAR					
10...	1100	.73	.0	--	196
APR					
15...	1040	1.7	6.5	--	202
MAY					
08...	1325	.86	14.5	--	203
JUN					
05...	1225	1.2	18.0	--	223
JUL					
10...	1235	.60	23.0	--	192
AUG					
08...	1145	.44	16.0	--	201
SEP					
05...	1200	.43	15.5	--	208

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06406000 - BATTLE CR AT HERMOSA SD (LAT 43 49 41 LONG 103 11 44)					
OCT , 1979					
04...	1245	10	9.5	--	690
31...	1445	10	5.0	--	650
DEC					
10...	1515	10	6.5	--	690
JAN , 1980					
03...	1320	6.6	1.0	--	710
FEB					
07...	1430	2.6	1.0	--	840
MAR					
10...	1330	4.0	2.0	--	670
APR					
15...	1410	4.6	10.5	--	733
MAY					
08...	1115	4.1	11.0	--	665
JUN					
05...	1110	3.6	17.0	--	688
JUL					
10...	1050	1.3	22.0	--	760
AUG					
08...	0945	1.2	16.5	--	700
SEP					
05...	0955	1.7	14.0	--	725
06408500 - SPRING CR NEAR HERMOSA SD (LAT 43 56 30 LONG 103 09 33)					
OCT , 1979					
31...	1610	.28	4.0	--	1200
DEC					
10...	1020	.34	2.0	--	1220
JAN , 1980					
03...	0915	.30	.0	--	1280
FEB					
07...	0945	.32	.0	--	1180
MAR					
10...	0915	.28	.5	--	1060
APR					
10...	1645	.25	7.0	--	1035
MAY					
08...	0830	.05	11.0	--	1085
06410000 - CASTLE CR BELOW DEERFIELD DAM SD (LAT 44 01 45 LONG 103 46 53)					
OCT , 1979					
01...	1030	29	9.5	--	405
NOV					
14...	1410	2.5	5.5	--	396
JAN , 1980					
15...	1015	2.6	3.0	--	--
MAR					
18...	0935	2.5	4.0	--	456
APR					
14...	1100	22	4.5	--	493
MAY					
13...	0920	21	6.0	--	422
JUN					
10...	1015	19	7.5	--	437
JUL					
09...	1145	9.2	7.0	--	500
AUG					
05...	1050	7.8	9.0	--	457
SEP					
10...	0950	24	6.0	--	452

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE, WATER (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)
06410500 - RAPID CR ABOVE PACTOLA RES NEAR SILVER CITY SD (LAT 44 05 05 LONG 103 34 48)					
OCT , 1979					
03...	0910	46	7.5	--	385
NOV					
15...	1420	25	2.0	--	426
DEC					
12...	0900	8.7	.0	--	--
JAN , 1980					
16...	1000	18	1.0	--	482
FEB					
12...	1330	14	.5	--	451
MAR					
19...	1050	21	1.0	--	387
APR					
16...	1135	67	5.0	--	366
MAY					
15...	0950	61	6.0	--	396
JUN					
10...	1015	43	10.5	--	430
JUL					
15...	0935	20	13.5	--	370
AUG					
06...	0920	16	12.0	--	427
SEP					
02...	1100	24	9.5	--	418
06412500 - RAPID CR ABOVE CANYON LAKE NEAR RAPID CITY SD (LAT 44 03 04 LONG 103 18 47)					
JUL , 1980					
20...	0905	98	14.0	--	335
25...	1920	97	13.0	--	--
AUG					
20...	0825	40	15.0	--	--
06414000 - RAPID CR AT RAPID CITY SD (LAT 44 05 09 LONG 103 14 31)					
MAY , 1980					
21...	1400	65	20.0	--	430
JUL					
20...	0950	123	16.0	--	365
25...	2100	129	15.5	--	--
06422500 - BOXELDER CR NEAR NEMO SD (LAT 44 08 38 LONG 103 27 16)					
OCT , 1979					
05...	0920	3.4	8.0	--	348
NOV					
09...	0945	3.7	.5	--	362
DEC					
13...	1030	3.7	.0	--	403
JAN , 1980					
16...	1400	2.2	.5	--	381
FEB					
20...	0910	3.3	.0	--	352
MAR					
24...	1235	5.4	7.0	--	307
APR					
16...	1655	25	8.0	--	237
MAY					
16...	1110	13	11.5	--	287
JUN					
10...	1455	5.8	19.0	--	302
JUL					
17...	1115	2.6	21.0	--	287
AUG					
06...	1405	1.6	22.0	--	315
SEP					
04...	1105	3.6	13.5	--	317

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06423500 - CHEYENNE R NEAR WASTA SD (LAT 44 04 52 LONG 102 24 03)					
OCT , 1979					
09...	1030	74	9.5	--	2500
NOV					
01...	1600	148	3.0	--	1650
DEC					
06...	1500	250	.0	--	--
JAN , 1980					
15...	1400	113	16.0	--	2900
FEB					
11...	1445	94	.0	--	2030
MAR					
31...	1050	286	5.0	--	1340
MAY					
14...	1025	214	12.5	--	987
JUN					
06...	1035	77	19.0	--	2120
JUL					
14...	1020	15	23.0	--	2630
AUG					
07...	1150	21	23.5	--	2880
SEP					
03...	1015	128	16.5	--	1335
06425500 - ELK CR NEAR ELM SPRINGS SD (LAT 44 14 54 LONG 102 30 10)					
NOV , 1979					
13...	0815	.09	.5	--	6550
DEC					
10...	0900	.17	.0	--	6320
MAR , 1980					
17...	0915	.03	.0	--	3810
APR					
15...	0750	.02	4.5	--	6520
JUN					
09...	1015	.08	25.0	--	3660

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06428500 - BELLE FOURCHE R AT WY-SD STATE LINE (LAT 44 44 59 LONG 104 02 49)					
OCT , 1979					
04...	0645	10	6.5	--	2350
11...	0630	17	11.0	--	2550
NOV					
06...	1630	16	4.0	--	2420
07...	0615	26	1.0	--	2200
DEC					
03...	1615	14	1.0	--	2900
05...	0600	22	1.0	--	2600
JAN , 1980					
08...	0930	4.8	.0	--	2870
08...	1400	--	.0	--	3100
FEB					
06...	0905	5.7	.0	--	2700
20...	1000	--	.5	--	2800
MAR					
05...	0845	42	.0	--	1335
18...	1715	--	.5	--	1360
APR					
08...	1515	42	10.5	--	1820
22...	1700	--	19.0	--	1920
MAY					
06...	1530	32	20.5	--	1980
20...	1800	--	24.0	--	2090
JUN					
03...	1515	104	23.0	--	1290
18...	1945	--	23.0	--	1440
JUL					
01...	1600	9.3	24.0	--	2140
24...	1730	--	26.5	--	1320
AUG					
07...	1600	322	24.0	--	1180
27...	0800	--	15.0	--	1300
SEP					
09...	1715	30	18.0	--	1750
23...	1830	--	14.0	--	2060
06429500 - COLD SPRINGS CR AT BUCKHORN WY (LAT 44 09 14 LONG 104 04 39)					
OCT , 1979					
09...	1340	4.5	6.5	--	420
DEC					
04...	1430	5.8	.0	--	498
FEB , 1980					
06...	1420	4.4	1.5	--	471
25...	1430	6.4	1.0	--	450
APR					
28...	1550	5.0	12.0	--	390
JUN					
18...	1530	4.8	19.0	--	425
JUL					
23...	1540	4.4	18.0	--	450
AUG					
26...	1615	5.4	10.5	--	320

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06429905 - SAND CR NEAR RANCH A NEAR BEULAH WY (LAT 44 31 13 LONG 104 05 00)					
OCT , 1979					
02...	1230	22	12.0	--	800
DEC					
03...	1215	23	7.5	--	800
FEB , 1980					
04...	1320	20	8.5	--	790
APR					
10...	1030	21	8.0	--	760
MAY					
08...	1000	22	9.0	--	830
JUN					
02...	1500	24	16.0	--	749
JUL					
02...	1100	23	16.0	--	830
AUG					
07...	0915	19	15.5	--	825
SEP					
10...	1100	22	12.0	--	810
06430000 - MURRAY DITCH AT WY-SD STATE LINE (LAT 44 34 35 LONG 104 02 58)					
OCT , 1979					
02...	1430	11	11.5	--	1410
JUN , 1980					
02...	1745	9.6	19.5	--	1440
JUL					
02...	1230	12	17.0	--	1600
AUG					
07...	1245	6.7	--	--	1650
SEP					
10...	1205	8.6	14.0	--	1580
06430500 - REDWATER CR AT WY-SD STATE LINE (LAT 44 34 26 LONG 104 02 54)					
OCT , 1979					
02...	1600	23	12.0	--	1510
NOV					
05...	1630	37	6.5	--	1480
DEC					
03...	1415	37	6.0	--	1500
JAN , 1980					
08...	1630	36	.0	--	1440
FEB					
04...	1530	35	7.0	--	1460
MAR					
03...	1415	34	6.0	--	1575
APR					
10...	1200	43	8.0	--	1410
MAY					
08...	1345	33	13.0	--	1500
JUN					
02...	1615	22	18.5	--	1530
JUL					
02...	1330	18	19.0	--	1720
AUG					
07...	1400	15	21.0	--	1700
SEP					
10...	1315	18	15.5	--	1800

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

06431500 - SPEARFISH CR AT SPEARFISH SD (LAT 44 28 57 LONG 103 51 40)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
OCT , 1979					
02...	1000	47	9.0	--	440
NOV					
05...	1115	46	3.5	--	460
DEC					
03...	0945	49	2.5	--	475
JAN , 1980					
08...	1125	30	.0	--	450
FEB					
04...	1030	45	3.5	--	455
MAR					
03...	0945	46	3.0	--	460
APR					
09...	1615	44	5.0	--	455
MAY					
07...	1540	56	9.0	--	380
JUN					
02...	1230	56	9.5	--	454
JUL					
02...	0830	43	12.5	--	470
AUG					
06...	1800	41	14.5	--	440
SEP					
10...	0830	42	9.0	--	435

06433000 - REDWATER RIVER ABOVE BELLE FOURCHE SD (LAT 44 40 02 LONG 103 50 20)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
OCT , 1979					
04...	1100	77	9.0	--	1430
NOV					
07...	1430	150	5.0	--	1240
DEC					
05...	1100	156	4.0	--	1220
JAN , 1980					
09...	1230	114	.0	--	1460
FEB					
06...	1110	157	.0	--	1210
MAR					
03...	1550	143	3.0	--	1250
APR					
09...	1240	128	10.5	--	1350
MAY					
07...	1045	95	13.0	--	1260
JUN					
04...	1415	22	24.0	--	1360
30...	1500	17	27.0	--	1460
JUL					
22...	1325	3.3	28.0	--	1580
AUG					
05...	1540	2.4	24.0	--	2580
SEP					
08...	1700	48	18.0	--	1370

06433500 - HAY CR AT BELLE FOURCHE SD (LAT 44 40 01 LONG 103 50 46)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
DEC , 1979					
04...	1610	.05	--	--	3150
FEB , 1980					
04...	1650	.10	.0	--	3280
JUN					
05...	0800	.02	18.0	--	3140

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE, WATER (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)
06436000 - BELLE FOURCHE R NEAR FRUITDALE SD (LAT 44 41 27 LONG 103 44 14)					
OCT , 1979					
03...	1630	5.9	13.5	--	2220
NOV					
07...	1230	4.5	4.5	--	2560
DEC					
04...	1530	5.1	1.5	--	2800
JAN , 1980					
09...	1045	2.8	.0	--	2700
FEB					
05...	1650	3.5	.0	--	2620
MAR					
04...	1700	3.8	.0	--	2250
APR					
09...	1045	3.5	9.5	--	2200
MAY					
07...	0920	.95	10.5	--	2100
JUN					
04...	1255	5.6	23.0	--	2240
30...	1335	3.7	--	--	2300
AUG					
05...	1415	5.9	21.0	--	2580
SEP					
08...	1530	6.2	19.5	--	2050
06438500 - CHEYENNE R NEAR PLAINVIEW SD (LAT 44 31 16 LONG 101 59 34)					
OCT , 1979					
23...	1000	162	5.0	2.0	2600
NOV					
19...	1000	192	3.5	9.5	2380
DEC					
18...	1015	114	.0	20.0	2600
JAN , 1980					
14...	1030	30	.0	3.0	3300
FEB					
12...	1020	128	.0	-5.0	2100
MAR					
11...	1215	418	.0	2.0	2120
APR					
08...	1050	340	10.5	15.0	1460
MAY					
07...	1040	90	16.0	9.0	2300
JUN					
05...	1000	472	21.5	23.0	2000
JUL					
03...	1040	53	--	26.5	2440
31...	0950	235	23.5	26.0	2150
AUG					
28...	--	229	20.0	25.0	--
SEP					
18...	0850	136	14.5	9.0	2190
06441000 - BAD R NEAR MIDLAND SD (LAT 44 04 01 LONG 101 09 36)					
APR , 1980					
14...	0855	2.0	--	--	1350
JUN					
09...	--	10	--	18.0	--

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06445980 - WHITE CLAY CR NEAR OGLALA SD (LAT 43 08 46 LONG 102 40 58)					
OCT , 1979					
01...	1200	3.5	15.0	--	520
NOV					
05...	1145	8.7	4.0	--	615
DEC					
03...	1230	10	.0	--	790
JAN , 1980					
07...	1300	6.2	.0	--	640
FEB					
04...	1500	4.2	.0	--	--
APR					
07...	1615	19	9.5	--	463
MAY					
05...	1440	15	18.5	--	510
JUN					
02...	1345	14	17.5	--	536
JUL					
07...	1425	4.5	23.5	--	465
AUG					
05...	1200	4.8	17.0	--	475
SEP					
15...	1105	4.2	16.0	--	504
06446000 - WHITE R NEAR OGLALA SD (LAT 43 15 17 LONG 102 49 29)					
OCT , 1979					
01...	1345	4.4	15.0	--	1080
NOV					
05...	1415	13	3.5	--	1320
DEC					
03...	1530	12	.0	--	1070
JAN , 1980					
07...	1545	15	.0	--	980
FEB					
04...	1640	20	.0	--	--
27...	1550	201	.0	--	590
APR					
07...	1335	150	8.0	--	1000
10...	1310	161	9.0	--	864
MAY					
05...	1145	30	17.0	--	741
JUN					
02...	1130	32	16.5	--	742
JUL					
07...	1425	10	24.0	--	591
AUG					
05...	0935	2.3	16.0	--	552
SEP					
15...	1325	6.1	19.0	--	830

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06447000 - WHITE R NEAR KADOKA SD (LAT 43 45 09 LONG 101 31 28)					
OCT , 1979					
01...	0930	.23	16.0	--	670
29...	1230	21	5.0	6.0	570
NOV					
26...	1325	51	1.0	5.0	1100
DEC					
17...	1145	38	.0	4.0	810
FEB , 1980					
19...	1310	34	.0	4.0	800
MAR					
18...	1100	261	4.0	5.0	540
APR					
14...	1120	280	10.5	18.0	740
MAY					
13...	1045	88	12.0	21.0	730
JUN					
09...	1110	120	19.0	26.0	380
JUL					
08...	1015	12	22.0	24.0	530
AUG					
04...	1225	22	19.5	28.0	910
SEP					
02...	1045	3.8	24.5	27.0	740
06447500 - LITTLE WHITE R NEAR MARTIN SD (LAT 43 10 00 LONG 101 37 47)					
OCT , 1979					
01...	1345	6.3	17.0	20.0	280
NOV					
06...	0815	6.7	.0	1.0	230
26...	1530	18	1.0	4.0	270
DEC					
17...	1515	10	.0	8.0	270
JAN , 1980					
22...	1340	6.6	.0	.0	240
FEB					
20...	0745	12	.0	-2.5	230
MAR					
18...	1600	51	4.5	17.0	180
APR					
14...	1515	40	10.5	16.0	455
MAY					
13...	1415	21	13.5	18.5	280
JUN					
09...	1405	13	22.0	23.5	240
JUL					
08...	1530	4.6	26.5	25.0	350
AUG					
04...	1535	3.0	21.0	23.0	23[illegible]
SEP					
02...	1430	4.9	28.0	29.0	320

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06449000 - LAKE CR BELOW REFUGE NEAR TUTHILL SD (LAT 43 08 46 LONG 101 30 38)					
NOV , 1979					
06...	1005	9.3	1.0	-4.0	470
26...	1415	52	1.0	4.0	590
DEC					
17...	1355	31	2.0	8.0	470
JAN , 1980					
22...	1215	9.8	.0	.0	440
FEB					
19...	1530	25	4.0	9.0	400
MAR					
18...	1350	35	4.5	14.0	220
APR					
14...	1300	64	12.0	15.5	290
MAY					
13...	1250	25	13.5	16.0	320
JUN					
09...	1310	8.2	24.5	23.5	420
JUL					
08...	1210	9.0	24.0	25.0	500
AUG					
04...	1425	2.4	22.5	23.5	395
SEP					
02...	1250	.37	23.0	27.5	620
06449100 - LITTLE WHITE R NEAR VETAL SD (LAT 43 06 03 LONG 101 13 49)					
OCT , 1979					
02...	0830	25	10.0	15.0	340
NOV					
05...	1420	53	4.0	1.0	300
27...	0930	45	1.0	-6.0	460
DEC					
18...	0830	65	.0	5.0	400
JAN , 1980					
23...	0920	36	.0	.0	360
FEB					
20...	0945	61	.0	5.0	310
MAR					
19...	1100	75	6.0	14.0	260
APR					
15...	0730	154	8.0	2.0	300
MAY					
14...	0835	62	12.5	15.5	330
JUN					
10...	0715	41	16.0	17.0	355
JUL					
09...	0830	18	--	24.0	320
AUG					
05...	0800	15	12.0	11.5	340
SEP					
03...	0830	16	22.5	24.0	280

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06449400 - ROSEBUD CR AT ROSEBUD SD (LAT 43 14 09 LONG 100 51 12)					
OCT , 1979					
02...	1130	4.8	17.0	18.0	340
30...	1100	11	5.0	4.0	360
NOV					
27...	1210	5.0	1.0	.0	410
DEC					
18...	1210	8.0	2.5	12.0	360
JAN , 1980					
23...	1255	8.0	1.0	--	370
FEB					
20...	1305	8.4	4.0	12.0	325
MAR					
19...	1245	7.9	7.5	15.0	340
APR					
15...	1055	8.1	11.0	11.0	335
MAY					
14...	1230	8.2	17.0	18.0	310
JUN					
10...	1205	6.6	21.0	25.0	320
JUL					
09...	1105	4.5	25.0	26.0	270
AUG					
05...	1230	3.6	20.0	25.5	290
SEP					
03...	1145	5.2	22.5	27.0	290
06449500 - LITTLE WHITE R NEAR ROSEBUD SD (LAT 43 19 32 LONG 100 53 00)					
OCT , 1979					
02...	1020	66	16.0	18.0	330
30...	0945	123	4.0	5.0	270
NOV					
27...	1110	94	1.0	.0	580
DEC					
18...	1100	134	.0	11.0	370
JAN , 1980					
23...	1145	74	.0	.0	340
FEB					
20...	1210	143	.0	10.0	305
MAR					
19...	1145	79	6.0	14.0	270
APR					
15...	0935	236	9.0	8.5	300
MAY					
14...	1140	129	16.5	23.0	320
JUN					
10...	1110	91	22.5	25.0	315
JUL					
09...	1005	61	24.5	26.5	300
AUG					
05...	0955	43	17.5	23.5	320
SEP					
03...	1030	63	24.0	27.0	350

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE, WATER (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (MICRO-MHOS) (00095)
06450500 - LITTLE WHITE R BELOW WHITE RIVER SD (LAT 43 36 04 LONG 100 44 52)					
OCT , 1979					
02...	1445	124	17.0	18.0	350
30...	1325	130	5.0	5.0	340
NOV					
27...	1410	84	1.0	.0	560
DEC					
18...	1410	31	.0	15.0	410
JAN , 1980					
23...	1540	59	.0	5.0	360
29...	1215	34	.0	-21.0	400
FEB					
20...	1450	102	.0	2.0	325
MAR					
19...	1450	129	11.0	16.0	410
APR					
15...	1305	227	14.0	12.0	320
MAY					
14...	1400	126	20.0	25.0	340
JUN					
10...	1415	83	27.0	25.0	330
JUL					
09...	1315	56	30.5	30.5	330
AUG					
05...	1440	32	27.0	30.0	340
SEP					
03...	1330	86	26.0	31.0	360
06464500 - KEYA PAHA R AT WEWELA SD (LAT 43 01 42 LONG 099 46 45)					
OCT , 1979					
03...	0850	18	9.0	4.0	450
NOV					
05...	1110	55	3.0	1.0	450
28...	0910	19	.0	-10.0	--
DEC					
19...	0910	30	.0	-1.0	475
JAN , 1980					
24...	0930	44	.0	5.0	460
FEB					
21...	0940	38	.0	-2.0	380
MAR					
20...	0900	78	--	6.0	380
APR					
15...	1650	79	15.0	10.0	480
MAY					
15...	0935	40	13.5	12.0	330
JUN					
11...	0750	32	18.0	15.5	350
JUL					
10...	0745	18	22.5	21.0	420
AUG					
06...	0750	2.3	19.0	23.0	490
SEP					
04...	0900	7.9	23.0	15.0	400

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

06467500 - MISSOURI R AT YANKTON SD (LAT 42 51 56 LONG 097 23 37)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
OCT , 1979					
10...	1120	38800	15.0	14.5	810
24...	1210	37500	12.5	9.5	810
NOV					
06...	1105	32600	7.5	3.0	800
28...	1205	37600	3.0	-6.0	800
JAN , 1980					
03...	1615	20400	--	-6.0	690
FEB					
06...	1105	17700	1.0	-4.0	760
MAR					
18...	0845	14900	2.5	16.5	730
APR					
23...	1330	27700	19.5	13.0	860
MAY					
21...	1300	29800	14.0	26.0	780
JUN					
24...	1430	30200	30.0	22.0	790
JUL					
22...	0815	37500	25.0	19.0	810
AUG					
28...	1445	33800	22.5	20.0	--
SEP					
25...	0835	35500	18.0	7.5	790

06471200 - MAPLE R AT ND-SD STATE LINE (LAT 45 56 20 LONG 098 27 08)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
APR , 1980					
01...	0945	31	1.0	2.5	440
MAY					
13...	1000	.27	11.5	6.0	990
JUN					
18...	1055	.40	21.5	20.5	1060

06471500 - ELM R AT WESTPORT SD (LAT 45 39 22 LONG 098 29 48)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
OCT , 1979					
24...	1220	5.2	5.5	11.0	760
NOV					
20...	1200	5.5	2.5	3.0	710
DEC					
18...	1155	4.5	2.0	9.0	880
JAN , 1980					
09...	1305	4.0	.5	-21.0	980
FEB					
07...	1210	4.6	1.0	1.0	890
MAR					
06...	1305	3.9	1.0	-6.0	880
APR					
01...	1330	33	3.0	4.5	420
MAY					
13...	1610	7.1	17.0	18.0	610
JUN					
18...	1330	3.1	26.0	24.5	1000
JUL					
16...	1200	14	24.0	28.0	720
AUG					
13...	1145	6.2	22.5	26.0	700
SEP					
17...	1200	2.0	12.0	18.0	810

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06471898 - MOCCASIN CR NEAR WARNER SD (LAT 45 17 55 LONG 098 29 42)					
OCT , 1979					
25...	1055	1.9	5.0	6.5	3230
NOV					
21...	1020	5.1	3.5	-1.0	2250
DEC					
19...	0915	1.1	1.0	.0	4200
JAN , 1980					
10...	0935	.19	.5	-8.0	3800
MAR					
07...	1005	.85	.5	-6.5	2750
APR					
02...	1055	11	1.0	8.5	1200
MAY					
14...	1715	2.4	19.0	19.5	2600
JUN					
17...	1640	3.0	24.0	27.0	1580
JUL					
17...	0910	.15	22.5	28.0	2220
AUG					
13...	1545	.06	26.0	29.0	2870
SEP					
16...	1635	.97	16.0	20.0	1490
06473000 - JAMES R AT ASHTON SD (LAT 45 00 02 LONG 098 28 57)					
OCT , 1979					
25...	1510	164	7.0	11.5	770
NOV					
19...	1515	277	3.5	10.0	750
DEC					
17...	1455	181	.5	5.5	930
JAN , 1980					
08...	1515	37	.0	-21.0	1150
FEB					
06...	1435	7.7	.5	-3.5	1600
MAR					
05...	1425	3.4	.5	-17.0	2030
APR					
02...	1420	113	1.0	11.5	1180
MAY					
15...	1010	43	14.5	16.5	1170
JUN					
19...	1320	28	24.5	21.0	1430
JUL					
15...	1400	2.9	30.0	30.0	1900
31...	1525	.36	27.5	27.5	1900
AUG					
12...	1130	.07	--	22.0	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

06473700 - SNAKE CR NEAR ASHTON SD (LAT 45 01 50 LONG 098 34 26)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
OCT , 1979					
25...	1235	.01	8.5	10.5	960
NOV					
14...	1655	1.4	.0	-4.0	800
19...	1620	.85	5.5	9.0	1220
DEC					
17...	1625	1.3	.5	6.0	1240
APR , 1980					
02...	1240	2.7	8.0	13.0	920
MAY					
12...	1420	.56	13.5	15.0	1410

06474000 - TURTLE CR NEAR TULARE SD (LAT 44 44 06 LONG 098 35 09)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
NOV , 1979					
19...	1050	.26	5.0	7.5	1220
DEC					
17...	1025	.13	2.0	-12.0	1480
JAN , 1980					
08...	1040	.25	.0	-20.5	1620
FEB					
06...	1035	.37	1.0	-4.0	2000
MAR					
05...	1040	.25	.5	-13.0	2050
31...	1045	.55	.5	8.0	880

06474300 - MEDICINE CR NEAR ZELL SD (LAT 44 45 52 LONG 098 42 13)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
OCT , 1979					
23...	1130	.13	4.0	6.0	1740
NOV					
19...	1145	.91	4.0	7.5	1280
DEC					
17...	1120	.11	.5	-11.0	2200
JAN , 1980					
08...	1135	.05	.0	-20.0	2130
MAR					
31...	1200	.72	1.0	10.0	820
MAY					
12...	1145	.19	12.5	14.5	1980
JUN					
17...	1240	.06	22.0	24.0	1800
JUL					
15...	1040	.01	25.0	31.0	1720

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06475000 - JAMES R NEAR REDFIELD SD (LAT 44 55 13 LONG 098 25 52)					
OCT , 1979					
26...	1010	136	6.0	8.5	790
NOV					
21...	1310	267	2.5	2.0	760
DEC					
19...	1250	178	.5	0.0	820
JAN , 1980					
10...	1325	32	.5	-5.0	1100
FEB					
08...	1300	7.8	.5	-5.0	2050
MAR					
07...	1355	4.6	.5	-1.0	2350
31...	1500	82	.5	10.0	820
MAY					
15...	1220	41	17.0	17.0	1170
JUN					
19...	1550	28	25.0	22.5	1400
JUL					
17...	--	.00	--	--	--
31...	1355	1.7	23.0	31.0	2050
SEP					
16...	1305	.06	17.0	18.0	2190
06476500 - SAND CK NEAR ALPENA SD (LAT 44 09 15 LONG 098 26 06)					
APR , 1980					
30...	1335	.25	19.0	21.5	2240
06477000 - JAMES R NEAR FORESTBURG SD (LAT 43 58 26 LONG 098 04 14)					
OCT , 1979					
29...	1125	147	10.0	11.0	1090
NOV					
30...	1305	229	1.0	-4.0	880
DEC					
13...	1120	210	.5	-4.0	830
JAN , 1980					
24...	1545	43	.0	5.5	990
FEB					
27...	1050	19	.0	-4.0	1190
MAR					
20...	1520	25	1.0	6.0	810
APR					
30...	1115	317	19.0	18.5	900
MAY					
22...	1200	31	22.5	28.0	1110
JUN					
27...	1220	40	28.0	35.0	--
JUL					
25...	1120	8.0	24.5	23.5	1060
AUG					
27...	1055	2.4	22.5	19.0	1280
SEP					
19...	0855	.08	15.0	18.5	1590

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06477500 - FIRESTEEL CR NEAR MOUNT VERNON SD (LAT 43 46 30 LONG 098 14 33)					
OCT , 1979					
23...	1015	.04	4.5	-1.5	2830
NOV					
27...	1055	.07	3.0	-3.0	3100
DEC					
13...	1500	.06	4.0	-.5	3350
JAN , 1980					
22...	1020	.01	.0	-6.0	3400
MAR					
20...	1300	.16	4.0	--	1180
20...	1310	.16	4.0	5.0	--
APR					
25...	1350	<.01	19.0	16.5	2280
MAY					
21...	1300	E.01	21.5	28.5	2600
JUN					
27...	0935	.50	24.0	27.0	2500
AUG					
27...	1400	.05	19.5	26.0	1620
06478052 - ENEMY CR NEAR MITCHELL SD (LAT 43 38 33 LONG 097 59 09)					
NOV , 1979					
30...	1505	.06	3.0	-2.0	1920
DEC					
13...	1345	.08	3.0	-1.0	2100
JAN , 1980					
24...	1340	.24	1.0	6.0	2180
FEB					
13...	1535	.06	.0	-6.5	2460
MAR					
20...	1115	.16	4.0	6.0	940
APR					
25...	1245	.08	19.0	19.0	1660
MAY					
21...	1025	.09	21.0	23.5	1730
06478390 - WOLF CR NEAR CLAYTON SD (LAT 43 22 18 LONG 097 36 12)					
OCT , 1979					
23...	1445	2.5	6.0	7.0	2320
NOV					
27...	1345	8.6	.5	-1.0	2450
DEC					
17...	1200	1.4	.0	-2.5	2900
JAN , 1980					
22...	1305	1.8	.0	-2.5	2450
FEB					
12...	1205	1.2	.0	-7.5	2420
MAR					
20...	0940	8.7	.5	4.0	1440
APR					
25...	0950	3.4	10.0	12.0	2430
MAY					
23...	1025	1.5	20.0	22.0	2420
JUN					
26...	1425	.48	32.0	36.0	2160
06478540 - LITTLE VERMILLION R NEAR SALEM SD (LAT 43 47 39 LONG 097 22 02)					
APR , 1980					
10...	1215	.92	9.0	10.0	1310
JUN					
05...	1205	1.0	21.5	27.5	1130

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

06478690 - WEST FORK VERMILLION R NEAR PARKER SD (LAT 43 24 55 LONG 097 12 18)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
OCT , 1979					
25...	1225	.21	8.5	11.0	1360
NOV					
29...	1230	2.9	.0	-7.5	1660
DEC					
19...	1210	1.9	1.0	9.0	2180
JAN , 1980					
24...	1010	1.1	.5	4.5	2150
FEB					
13...	1210	.44	.0	-6.0	2000
MAR					
14...	1205	1.4	3.0	13.0	1310
APR					
10...	1005	8.9	8.0	7.0	1440
MAY					
08...	1145	1.1	12.5	10.0	1970
JUN					
05...	0955	1.1	20.0	23.0	1710
JUL					
10...	1615	.07	30.0	36.0	1550
AUG					
11...	1340	.02	28.0	27.0	1460
SEP					
08...	1330	.02	28.5	33.5	1400

06479000 - VERMILLION R NEAR WAKONDA SD (LAT 42 59 27 LONG 096 57 49)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
OCT , 1979					
25...	1100	24	7.0	11.0	1370
NOV					
28...	1700	87	.5	-5.5	2000
DEC					
12...	1500	14	.0	3.5	1290
19...	1015	46	.0	4.5	2050
JAN , 1980					
23...	1705	32	.0	-2.5	1720
FEB					
13...	1025	22	.0	-6.0	1600
MAR					
18...	1705	110	4.5	16.5	1060
APR					
23...	1615	74	19.5	19.5	1760
MAY					
19...	1710	33	21.0	23.5	1510
JUN					
25...	1540	16	30.5	34.0	1300
JUL					
22...	1625	5.3	30.0	28.0	1140
AUG					
26...	1325	57	15.5	15.0	580
SEP					
24...	1650	1.5	17.5	20.5	1170

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06479438 - BIG SIOUX R NEAR WATERTOWN SD (LAT 45 00 22 LONG 097 09 53)					
OCT , 1979					
11...	1055	1.4	9.5	12.5	620
NOV					
08...	1655	14	.5	-3.0	700
DEC					
04...	1520	4.6	1.0	6.5	--
JAN , 1980					
24...	1105	1.0	.5	3.0	750
APR					
08...	0925	34	7.5	3.0	470
MAY					
05...	1610	13	18.0	20.0	650
JUN					
02...	1710	27	19.0	20.5	540
JUL					
08...	0955	6.3	22.5	22.0	570
AUG					
15...	1100	.52	21.5	22.0	570
SEP					
12...	1350	.43	17.5	20.5	570
06479515 - WILLOW CR NEAR WATERTOWN SD (LAT 44 54 17 LONG 097 03 31)					
OCT , 1979					
11...	1240	2.3	10.0	15.5	940
NOV					
08...	1500	5.2	.5	-2.0	880
DEC					
04...	1700	2.7	1.0	2.0	--
JAN , 1980					
23...	1555	.64	.5	-5.0	1270
FEB					
14...	1555	.22	.5	-3.0	1470
MAR					
11...	1520	.14	.0	4.5	1430
APR					
07...	1605	5.7	11.5	8.0	800
MAY					
06...	0935	3.5	13.0	8.0	890
JUN					
02...	1525	79	19.0	25.5	540
JUL					
08...	1215	3.8	24.0	25.5	820
AUG					
15...	0845	.91	19.0	21.5	710
SEP					
12...	0955	.21	16.5	16.5	860
06479525 - BIG SIOUX R NEAR CASTLEWOOD SD (LAT 44 43 54 LONG 097 02 39)					
OCT , 1979					
11...	1435	33	12.0	16.0	790
NOV					
08...	1330	26	.5	-2.0	850
DEC					
04...	1335	28	.5	9.0	--
JAN , 1980					
23...	1410	13	.5	--	1020
FEB					
14...	1415	8.4	.5	-3.0	1140
MAR					
11...	1230	9.2	.0	-4.5	1120
APR					
07...	1210	24	12.0	10.0	--
MAY					
05...	1145	18	15.0	20.0	920
JUN					
02...	1205	12	19.0	23.0	920
JUL					
07...	1640	63	29.0	29.5	860
AUG					
14...	1500	11	22.0	23.0	750
SEP					
11...	1315	8.5	18.0	20.5	880

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06479529 - STRAY HORSE CR NEAR CASTLEWOOD SD (LAT 44 43 52 LONG 096 57 23)					
OCT , 1979					
11...	1530	.30	13.0	14.5	1140
NOV					
08...	1125	2.9	.0	-2.0	930
DEC					
04...	1140	.95	2.0	2.0	--
JAN , 1980					
23...	1135	.40	1.0	-6.0	1270
FEB					
14...	1145	.18	.5	-2.0	1440
MAR					
11...	1335	.18	.0	-4.5	1170
APR					
07...	1330	3.0	10.5	9.0	600
MAY					
05...	1305	.95	17.0	20.5	900
JUN					
02...	1535	.82	18.0	17.0	940
JUL					
07...	1405	3.3	28.0	28.5	900
AUG					
14...	1145	1.0	22.0	21.0	920
SEP					
11...	1140	.31	17.0	20.5	940
06479640 - HIDEWOOD CR NEAR ESTELLINE SD (LAT 44 36 42 LONG 096 54 17)					
OCT , 1979					
12...	0945	5.8	7.0	3.0	930
NOV					
08...	0950	12	.5	.0	1030
DEC					
05...	1005	7.2	.5	3.5	--
JAN , 1980					
23...	1005	2.4	1.0	-6.5	1100
FEB					
14...	0950	1.6	.5	-1.0	1270
MAR					
12...	0940	1.3	.0	-3.0	1100
APR					
08...	1210	12	6.5	2.0	690
MAY					
06...	1200	5.6	13.5	14.0	980
JUN					
03...	1025	201	17.0	21.5	590
JUL					
08...	1450	17	24.0	27.0	780
AUG					
14...	1005	3.3	19.5	21.0	1020
SEP					
11...	1110	.46	17.0	20.5	1080

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

06479910 - SIXMILE CR NR BROOKINGS SD (LAT 44 20 46 LONG 096 44 51)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
OCT , 1979					
11...	1050	1.4	9.5	12.0	1020
NOV					
07...	1615	9.4	3.5	7.0	990
DEC					
05...	1145	4.1	.5	3.5	--
JAN , 1980					
22...	1615	1.8	.5	-7.0	930
MAR					
12...	1135	.72	.0	-3.0	990
APR					
08...	1520	6.4	6.0	2.0	800
MAY					
06...	1440	3.6	18.0	14.5	840
JUN					
03...	1410	108	19.5	29.0	780
JUL					
08...	1755	5.4	23.0	23.0	860
AUG					
13...	1515	4.4	25.0	27.0	910
SEP					
10...	1700	.60	22.5	20.5	930

06480000 - BIG SIOUX RIVER NEAR BROOKINGS SD (LAT 44 10 48 LONG 096 44 55)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE, WATER (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
OCT , 1979					
11...	1220	68	10.5	14.5	900
NOV					
07...	1440	179	3.5	6.0	930
DEC					
05...	1355	91	.5	1.0	--
JAN , 1980					
22...	1430	37	.5	-3.0	1020
FEB					
13...	1515	20	.5	-1.0	1070
MAR					
12...	1415	21	.0	-1.0	1040
APR					
08...	1710	138	6.5	2.0	700
MAY					
06...	1610	86	18.0	19.5	960
JUN					
03...	1625	69	23.0	26.0	860
26...	1620	3140	25.5	29.5	--
JUL					
09...	1010	230	22.0	28.0	850
AUG					
13...	1210	63	21.5	22.5	770
SEP					
10...	1430	31	20.0	22.5	920

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE, WATER (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (MICRO-MHOS) (00095)
06481500 - SKUNK CR AT SIOUX FALLS SD (LAT 43 32 01 LONG 096 47 26)					
OCT , 1979					
11...	0850	20	10.0	10.0	1140
NOV					
07...	0925	63	2.5	.5	1210
DEC					
06...	1610	32	.5	2.0	1380
JAN , 1980					
22...	0930	12	.0	-6.0	1190
FEB					
13...	0935	7.1	.0	-4.0	1290
MAR					
14...	0940	8.8	.0	6.0	850
APR					
09...	1810	89	8.0	11.0	1190
MAY					
08...	0935	14	10.5	4.0	1230
JUN					
05...	0750	166	20.0	23.0	850
JUL					
09...	1650	25	29.0	35.0	850
AUG					
11...	1710	1.9	29.0	30.0	980
SEP					
08...	1625	2.2	28.5	29.5	1050
06482610 - SPLITROCK CR AT CORSON SD (LAT 43 36 59 LONG 096 33 54)					
OCT , 1979					
11...	1015	34	11.0	15.0	750
NOV					
06...	1320	326	3.5	1.0	680
DEC					
05...	1550	12	.0	-5.0	780
06...	1155	88	.5	2.0	980
JAN , 1980					
22...	1125	36	.5	-4.0	820
FEB					
13...	1155	20	.5	-3.0	900
MAR					
12...	1640	48	.0	-1.0	630
APR					
09...	1240	114	8.5	10.5	710
MAY					
07...	1205	38	14.0	6.5	730
JUN					
04...	1250	91	21.0	27.5	360
JUL					
10...	1415	20	31.5	35.5	610
AUG					
12...	1225	7.0	23.0	24.0	610
SEP					
09...	1500	13	22.0	25.0	620

The following miscellaneous tables of water-quality data were retrieved from STORET for a network of surface water quality stations. The water samples were collected by USGS personnel and analyzed by the U.S. Army Corps of Engineers in Omaha, Nebraska.

In the body of the tables under the heading "DATE" the code CP(S)-G means that single grab samples were collected and then composited with a single sample.

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR POLLOCK, SD (LAT 45 51 58 LONG 100 21 52)

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440 HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
77/10/19	10 30											
CP(S)-G		0005	0.020		200		164		20		0.52	0.040
77/10/19	12 15											
78/03/08	12 30											
CP(S)-G			0.010		210		172	10	10	269	0.50	0.000
78/03/08	13 30											
78/04/25	09 00											
CP(S)-G		0005	0.060		122		100	4	110	123	0.30	0.020
78/04/25	09 50											
78/05/23	08 00											
CP(S)-G		0005	0.040		171		140	2	15	220	0.20	0.020
78/05/23	10 00											
78/07/17	12 30											
CP(S)-G			0.050									
78/07/17	13 30											
78/07/25	16 00											
CP(S)-G		0005	0.010									0.030
78/07/25	17 00											
78/08/14	15 45											
CP(S)-G			0.020		207		170	10	10	251	0.50	
78/08/14	16 15											
	15 45											
CP(S)-G												0.000
78/08/14	16 45											
78/10/12	14 00											
CP(S)-G		0005			200		164	11		239	0.50	
78/10/12	14 40											
79/02/14	10 00											
CP(S)-G		0005	0.010		194		159	11	25	231	0.60	0.000
79/02/14	12 00											
79/05/01	12 00											
CP(S)-G		0005	0.030	48.0			138	9	25	202	0.60	0.010
79/05/01	13 00											
79/06/01	11 00											0.000
	12 00											
CP(S)-G		0005	0.020	56.0			166	10	25	249	0.50	
79/06/27	11 00		0.040									
79/07/17	11 00											
CP(S)-G		0005										0.010
79/07/17	12 00											
	12 00											
CP(S)-G		0005	0.040	59.0			160	8	15	242	0.80	
79/07/17	13 00											
79/08/14	12 00											
CP(S)-G		0005										0.010
79/08/14	13 00											
79/08/15	12 00											
CP(S)-G		0005	0.080									
79/08/15	13 00											
79/08/31	12 00											
CP(S)-G		0005	0.030									
79/08/31	13 00											
79/10/02	12 00											
CP(S)-G		0005	0.030	60.0			181	2	5	251		0.010
79/10/02	13 00											
80/04/28	12 30											
CP(S)-G		0005	0.020	56.0			151	9		216		
80/04/28	12 40											
80/05/20	09 35											
CP(S)-G		0005	0.070	56.0			162	12		244		
80/05/20	10 00											
80/06/11	10 45											
CP(S)-G		0005	0.050									
80/06/11	11 00											
80/07/08	08 30											
CP(S)-G		0005	0.030	60.0			175	9		265		
80/07/08	08 40											
	08 30											
CP(S)-G		0005	0.030	60.0			175	9		265		
80/07/08	08 45											
80/07/31	13 00											
CP(S)-G		0005	0.040									

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR POLLOCK, SD (LAT 45 51 58 LONG 100 21 52)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515. RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
77/10/19	10 30											
CP(S)-G		0005	0.000		416		2.0	170	0.010		4.0	6.0
77/10/19	12 15											
78/03/08	12 30											
CP(S)-G			0.000	172	502		1.0	220	0.050		4.0	7.0
78/03/08	13 30											
78/04/25	09 00											
CP(S)-G		0005	0.000	99	308		24.0	117	0.250		7.0	17.0
78/04/25	09 50											
78/05/23	08 00											
CP(S)-G		0005	0.000	145	418		3.0	60	0.070		5.0	7.0
78/05/23	10 00											
78/07/17	12 30											
CP(S)-G									0.050		5.0	18.0
78/07/17	13 30											
78/07/25	16 00											
CP(S)-G		0005	0.000						0.040		4.0	
78/07/25	17 00											
78/08/14	15 45											
CP(S)-G				192	538		16.0	170	0.040		5.0	10.0
78/08/14	16 15											
	15 45											
CP(S)-G			0.000									
78/08/14	16 45											
78/10/12	14 00											
CP(S)-G		0005	0.000	222	524		15.0	204	0.030		5.0	10.0
78/10/12	14 40											
79/02/14	10 00											
CP(S)-G		0005	0.000	218	524		1.3	160	0.000		4.0	8.0
79/02/14	12 00											
79/05/01	12 00											
CP(S)-G		0005	0.000	178	448	0	2.0	159	0.050		5.0	15.0
79/05/01	13 00											
79/06/01	11 00		0.000									
	12 00											
CP(S)-G		0005		199	512	8		159	0.030		5.0	9.0

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440 HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
80/08/19	12 30											
CP(S)-G		0005	0.040	60.0			176	9		262		
80/08/19	12 50											
80/09/05	11 20											
CP(S)-G		0005	0.080				176	11		255		
80/09/05	11 40											
80/09/09	08 45											
CP(S)-G		0005	0.040	60.0			172	10		251		
80/09/09	09 05											

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR POLLOCK, SD (LAT 45 51 58 LONG 100 21 52)--Continued

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                           00671     00945     00515     00530     00076     01022     00610     00619     00680     00335
 DATE    TIME  DEPTH    PHOS-DIS   SULFATE   RESIDUE   RESIDUE      TURB     BORON  NH3+NH4-  UN-IONZD   T ORG C       COD
 FROM     OF               ORTHO   SO4-TOT  DISS-105  TOT NFLT  TRBIDMTR     B,TOT   N TOTAL   NH3-NH3         C  LOWLEVEL
  TO     DAY   FEET       MG/L P      MG/L    C MG/L      MG/L  HACH FTU      UG/L      MG/L      MG/L      MG/L      MG/L
79/06/27 11 00
79/07/17 11 00
CP(S)-G         0005       0.000                                                       0.060                 6.0      16.0
79/07/17 12 00
         12 00
CP(S)-G         0005
79/07/17 13 00                         108       480        19       7.0       151     0.050
79/08/14 12 00                                                                                               4.0      14.0
CP(S)-G         0005       0.000
79/08/14 13 00
79/08/15 12 00
CP(S)-G         0005
79/08/15 13 00                                                                         0.100
79/08/31 12 00                                                                                               7.0      18.0
CP(S)-G         0005
79/08/31 12 30
         12 00                                                                                                        19.0
CP(S)-G         0005
79/08/31 13 00                                                                         0.070
79/10/02 12 00                                                                                               6.0
CP(S)-G         0005       0.000       216       516         2       5.0
79/10/02 13 00                                                                 298     0.080
80/04/28 12 30                                                                                               5.0      12.0
CP(S)-G         0005
80/04/28 12 40                         105       436         4       2.0               0.010
80/05/20 09 35
CP(S)-G         0005
80/05/20 10 00                         226       534        15       5.0               0.230     0.020
80/06/11 10 45
CP(S)-G         0005
80/06/11 11 00                                                                         0.060
80/07/08 08 30
CP(S)-G         0005
80/07/08 08 40                         228       546        12       5.0       136     0.040     0.000
         08 30
CP(S)-G         0005                   228       548        12       5.0       136     0.040     0.000

80/07/31 13 00
CP(S)-G         0005
80/07/31 13 15                                                                         0.070     0.010
80/08/19 12 30
CP(S)-G         0005
80/08/19 12 50                         245       542        14       9.0       200     0.080     0.010
80/09/05 11 20
CP(S)-G         0005
80/09/05 11 40                         237       616        22       1.0               0.170
80/09/09 08 45
CP(S)-G         0005
80/09/09 09 05                         236       440        27       4.0       360     0.020     0.000

                           00620     00618     00613     00615     00625     00655     00678     01105     01002     01007
 DATE    TIME  DEPTH       NO3-N     NO3-N     NO2-N     NO2-N  TOT KJEL  POLY PO4  PHOS-TOT  ALUMINUM   ARSENIC    BARIUM
 FROM     OF               TOTAL      DISS      DISS     TOTAL         N       PO4  HYD+ORTH    AL,TOT    AS,TOT    BA,TOT
  TO     DAY   FEET         MG/L      MG/L      MG/L      MG/L      MG/L      MG/L    MG/L P      UG/L      UG/L      UG/L
77/10/19 10 30
CP(S)-G         0005       0.030
          AVE                                                      0.200
77/10/19 12 15                                                     0.300                0.01       230                  50
78/03/08 12 30
CP(S)-G                    0.080
78/03/08 13 30                                                     0.300                0.01
         12 30
CP(S)-G         0005
78/03/08 15 30
78/04/25 09 00                                                                                      90         2        40
CP(S)-G         0005       0.390
78/04/25 09 50                                                     0.900                0.06
         09 00                                                                                                          30
CP(S)-G
78/04/25 10 30
78/05/23 08 00                                                                                     900         1        40
CP(S)-G         0005       0.280
78/05/23 10 00                                                     0.500                0.01       290         1
78/07/17 12 30
CP(S)-G                    0.020
78/07/17 13 30                                                     0.600                0.05
78/07/25 16 00
CP(S)-G         0005       0.030
78/07/25 17 00                                                     0.300                0.01
78/08/14 15 45
CP(S)-G         0005
78/08/14 15 45
         15 45                                                                                     260         2
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MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR POLLOCK, SD (LAT 45 51 58 LONG 100 21 52)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
CP(S)-6			0.060				0.500		0.02			
78/08/14	16 15											
78/10/12	14 00											
CP(S)-6		0005	0.110						0.02	570	2	
78/10/12	14 40											
79/02/14	10.00											
CP(S)-6		0005	0.220				0.400		0.01			
79/02/14	12 00											
79/02/14	12 00											
CP(S)-6		0005								80	1	
79/02/14	13 00											
79/05/01	12 00											
CP(S)-6		0005	0.270	0.27			0.500		0.03	100	1	50
79/05/01	13 00											
79/06/01	12 00											
CP(S)-6		0005	0.010				0.500		0.02	310	1	30
79/06/01	13 00											
79/06/27	11 00		0.010				1.000		0.03			
79/07/17	11 00											
CP(S)-6		0005								470		90
79/07/17	12 00											
	12 00											
CP(S)-6		0005	0.020			0.000	0.700		0.02		2	
79/07/17	13 00											
79/08/15	12 00											
CP(S)-6		0005	0.060				1.400		0.07			
79/08/15	13 00											
79/08/31	12 00											
CP(S)-6		0005	0.050				0.800		0.02			
79/08/31	13 00											
79/10/02	12 00											
CP(S)-6		0005	0.070				0.600		0.02	280	2	82
79/10/02	13 00											
80/04/28	12 30											
CP(S)-6		0005	0.020									
80/04/28	12 40											
80/05/20	09 35											
CP(S)-6		0005	0.000									
80/05/20	10 00											
80/06/11	10 45											
CP(S)-6		0005	0.000									
80/06/11	11 00											
80/07/08	08 30											
CP(S)-6		0005	0.020									
80/07/08	08 40											
80/07/08	08 30											
CP(S)-6		0005	0.020									
80/07/08	08 45											
80/07/31	13 00											
CP(S)-6		0005	0.030									
80/07/31	13 15											
80/08/19	12 30											
CP(S)-6		0005	0.040				0.700			290	2	
80/08/19	12 50											
80/09/05	11 20											
CP(S)-6		0005	0.030									
80/09/05	11 40											
80/09/09	08 45											
CP(S)-6		0005	0.020							1730	2	
80/09/09	09 05											

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR POLLOCK, SD (LAT 45 51 58 LONG 100 21 52)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
77/10/19 CP(S)-G 77/10/19	10 30 12 15	0005	0.00	1	0	4	3	226	20	41		0.3
78/03/08 CP(S)-G 78/03/08	12 30 13 30											0.2
 CP(S)-G 78/03/08	12 30 15 30	0005	0.00	15	0	8	4	160	30	46		
78/04/25 CP(S)-G 78/04/25	09 00 09 50	0005										0.3
 CP(S)-G 78/04/25	09 00 10 30		0.00	4	0	5	1	1120	20	18		
78/05/23 CP(S)-G 78/05/23	08 00 10 00	0005	0.00	5	0	4	0	320	10	30		0.5
78/08/14 CP(S)-G 78/08/14	15 45 15 45	0005	0.00	2	0	10	2	300	20	43		
 CP(S)-G 78/08/14	15 45 16 15											0.5
78/10/12 CP(S)-G 78/10/12	14 00 14 00	0005	0.00	3	0	7	0	470	10	42		
 CP(S)-G 78/10/12	14 00 14 40	0005										0.3
79/02/14 CP(S)-G 79/02/14	10 00 12 00	0005										0.5
 CP(S)-G 79/02/14	12 00 13 00	0005	0.00	1	0	8	4	70	40	41		
79/05/01 CP(S)-G 79/05/01	12 00 13 00	0005	0.00	1	0	5	1	100	40	36	20.0	
79/06/01 CP(S)-G 79/06/01	12 00 13 00	0005	0.00	4	0	9	1	450	26	42	26.0	0.7
79/07/17 CP(S)-G 79/07/17	11 00 12 00	0005	1.00	5	0	12	3	600	15	44		
 CP(S)-G 79/07/17	12 00 13 00	0005									23.0	1.0
79/10/02 CP(S)-G 79/10/02	12 00 13 00	0005	0.00	3	7	4	7	374	28	41	24.0	0.6
80/04/28 CP(S)-G 80/04/28	12 30 12 40	0005									18.0	0.2
80/05/20 CP(S)-G 80/05/20	09 35 10 00	0005									22.0	0.5
80/07/08 CP(S)-G 80/07/08	08 30 08 40	0005									28.0	0.0
 CP(S)-G 80/07/08	08 30 08 45	0005									28.0	
80/08/19 CP(S)-G 80/08/19	12 30 12 50	0005	0.00	4	7	3		463	0	52	27.0	0.4
80/09/09 CP(S)-G 80/09/09	08 45 09 05	0005	0.00	0		7		1300	0	53	25.0	0.0

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR POLLOCK, SD (LAT 45 51 58 LONG 100 21 52)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
77/10/19 CP(S)-G 77/10/19	10 30 12 15	0005	0	9	1	1.0	0	20			19.0
78/03/08 CP(S)-G 78/03/08	12 30 13 30									60.00	
 CP(S)-G 78/03/08	12 30 15 30	0005	0	7	1	1.0	0	49			12.0
78/04/25 CP(S)-G 78/04/25	09 00 09 50	0005								38.00	
 CP(S)-G 78/04/25	09 00 10 30		0	7	1	1.0	0	33			29.0
78/05/23 CP(S)-G 78/05/23	08 00 10 00	0005	0	0	1	0.0		15		56.00	9.0
78/08/14 CP(S)-G 78/08/14	15 45 15 45	0005		6	1	0.0					24.0
 CP(S)-G 78/08/14	15 45 16 15									66.00	
 CP(S)-G 78/08/14	15 45 16 20	0005					0	44			
78/10/12 CP(S)-G 78/10/12	14 00 14 00	0005		6	1	1.0					31.0
 CP(S)-G 78/10/12	14 00 14 40	0005						33		69.00	
79/02/14 CP(S)-G 79/02/14	10 00 12 00	0005					0	28		72.00	
79/02/14 CP(S)-G 79/02/14	12 00 13 00	0005		10	0						6.0
79/05/01 CP(S)-G 79/05/01	11 00 12 00	0005			0	0.0					
 CP(S)-G 79/05/01	12 00 13 00	0005	0	0			0	34	5.00	64.00	7.0
79/06/01 CP(S)-G 79/06/01	12 00 13 00	0005	0	0	2	0.0	20	41	5.00	76.00	19.0
79/07/17 CP(S)-G 79/07/17	11 00 12 00	0005	20	10	1	1.0	20	64			40.0
 CP(S)-G 79/07/17	12 00 13 00	0005							5.00	72.00	
79/10/02 CP(S)-G 79/10/02	12 00 13 00	0005	0	8	1	1.0	0	28	5.00	73.00	25.0
80/07/08 CP(S)-G 80/07/08	08 30 08 40	0005								94.00	
 CP(S)-G 80/07/08	08 30 08 45	0005								94.00	
80/08/19 CP(S)-G 80/08/19	12 30 12 50	0005		8	1	0.0		34		85.00	44.0
80/09/09 CP(S)-G 80/09/09	08 45 09 05	0005		11	2	0.0		24		72.00	58.0

MISCELLANEOUS WATER QUALITY DATA

SPRING CREEK BASIN

LAKE POCASSE AT POLLOCK, SD (LAT 45 54 30 LONG 100 17 30)

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                      00665    00916    00440    00910    00410    00940    00080    00900    00951    00666
  DATE   TIME DEPTH   PHOS-TOT CALCIUM  HCO3 ION CALCIUM  T ALK    CHLORIDE COLOR    TOT HARD FLUORIDE PHOS-DIS
  FROM    OF                   CA-TOT   HCO3     CACO3    CACO3    CL       PT-CO    CACO3    F,TOTAL
   TO    DAY  FEET    MG/L P   MG/L     MG/L     MG/L     MG/L     MG/L     UNITS    MG/L     MG/L     MG/L P
77/10/19 14 20
CP(S)-G         0005  0.310                               382               90                        0.210
77/10/19 16 00
78/03/08 10 00
CP(S)-G         0005  0.890    113.0                      676      72                                 0.820
78/03/08 11 00
78/04/20 12 00
CP(S)-G                         23.0
78/04/20 13 00
78/04/25 12 00
CP(S)-G         0005  0.470                                86       6                                 0.340
78/04/25 13 00
78/05/15 15 15
CP(S)-G         0005  0.590     24.0                       98       5                                 0.410
78/05/15 16 15
78/07/25 17 30
CP(S)-G                                                                                               0.640
78/07/25 18 30
78/08/15 11 10
CP(S)-G         0005            32.0
78/08/15 11 10
         11 10
CP(S)-G         0005  0.720                               174       7
78/08/15 11 30
         11 10
CP(S)-G                                                                                               0.630
78/08/15 12 10
78/10/03 12 00
CP(S)-G         0005  0.620     36.0                      200       7                                 0.510
78/10/03 13 00
79/02/13 12 00
CP(S)-G         0005  0.460     59.0                      316      13                                 0.450
79/02/13 14 00
79/05/01 11 00
CP(S)-G         0005            40.0                      208      10       55       189              0.310
79/05/01 12 00

79/05/01 12 00
CP(S)-G         0005  0.400     40.0                      208      10       55       189              0.310
79/05/01 13 00
79/06/01 11 00                                                                                        0.340
         12 00
CP(S)-G         0005  0.370     41.0                      208      11       30       197
79/06/01 13 00
79/07/17 11 00
CP(S)-G         0005                                                                                  0.490
79/07/17 12 00
         12 00
CP(S)-G         0000  0.680
                0005            46.0                      232      10       30       210
79/07/17 13 00
79/08/14 12 00
CP(S)-G         0005  0.780     45.0                      254      11       20       224              0.690
79/08/14 13 00
79/10/02 12 00
CP(B)-G   AVE   0005  0.720     53.0                      100       1       40       246
CP(S)-G         0005                                                                                  0.570
79/10/02 13 00
80/04/28 13 50
CP(S)-G         0005  0.260     62.0                      310      19                276
80/04/28 14 00
80/05/20 10 30
CP(S)-G         0005  0.280     62.0                      322      23                256
80/05/20 11 00
80/07/08 07 30
CP(S)-G         0005  0.490     58.0                      337      22                288
80/07/08 07 40
         07 30
CP(S)-G         0005  0.490     58.0                      337      22                288
80/07/08 07 50
80/08/19 13 50
CP(S)-G         0005  0.500     57.0                      366      25                312
80/09/09 10 30
CP(S)-G         0005  0.320     53.0                      358      38                298
80/09/09 10 50
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MISCELLANEOUS WATER QUALITY DATA

SPRING CREEK BASIN

LAKE POCASSE AT POLLOCK, SD (LAT 45 54 30 LONG 100 17 30)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515 RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
77/10/19	14 20											
CP(S)-6		0005	0.110		1162		11.0		0.040		26.0	
77/10/19	16 00											
78/03/08	10 00											
CP(S)-6		0005	0.480	665	1954	4	2.0		1.180		35.0	103.0
78/03/08	11 00											
78/04/25	12 00											
CP(S)-6		0005	0.420	34	228	29	19.0		0.490		10.0	28.0
78/04/25	13 00											
78/05/15	15 15											
CP(S)-6		0005	0.310	485	228	11	11.0		0.110		11.0	30.0
78/05/15	16 15											
78/07/25	17 30											
CP(S)-6			0.600									
78/07/25	18 30											
78/08/15	11 10											
CP(S)-6		0005		51	554	12	21.0		0.090		16.0	40.0
78/08/15	11 30											
	11 10											
CP(S)-6			0.620									
78/08/15	12 10											
78/10/03	12 00											
CP(S)-6		0005	0.480	94	544	37	14.0		0.280		13.0	35.0
78/10/03	13 00											
79/02/13	12 00											
CP(S)-6		0005	0.430	128	568	31	5.3		0.380			31.0
79/02/13	14 00											
79/05/01	11 00											
CP(S)-6		0005	0.250	84	388	5	6.0	143	0.020		11.0	32.0
79/05/01	12 00											
	12 00											
CP(S)-6		0005	0.250	84	388	5	6.0	143	0.020		11.0	32.0
79/05/01	13 00											
79/06/01	11 00		0.340									
	12 00											
CP(S)-6		0005		86	410	31	16.0	177	0.020		11.0	25.0
79/07/17	11 00											
CP(S)-6		0005	0.000									
79/07/17	12 00											
	12 00											
CP(S)-6		0005		92	418	36	18.0	213	0.220		11.0	36.0
79/07/17	13 00											
79/08/14	11 00											
CP(S)-6		0005									17.0	
79/08/14	12 00											
	12 00											
CP(S)-6		0005	0.640	360	434	38	23.0	190	0.100			41.0
79/08/14	13 00											
79/10/02	12 00											
CP(B)-6	AVE	0005		98	520	50	30.0	238	0.240		14.0	41.0
CP(S)-6		0005	0.550									
79/10/02	13 00											
80/04/28	13 50											
CP(S)-6		0005		119	476	5	2.0		0.210			
80/04/28	14 00											
80/05/20	10 30											
CP(S)-6		0005		122	565	10	5.0		0.340	0.040		
80/05/20	11 00											
80/07/08	07 30											
CP(S)-6		0005		150	618	86	31.0	247	0.030	0.000		
80/07/08	07 40											
	07 30											
CP(S)-6		0005		150	618	86	31.0	247	0.030	0.000		
80/07/08	07 50											
80/08/19	13 50											
CP(S)-6		0005		172	548	71	30.0	270	0.040	0.000		
80/08/19	14 10											
80/09/09	10 30											
CP(S)-6		0005		187	822	56	25.0	310	0.010	0.000		
80/09/09	10 50											

MISCELLANEOUS WATER QUALITY DATA

SPRING CREEK BASIN

LAKE POCASSE AT POLLOCK, SD (LAT 45 54 30 LONG 100 17 30)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
77/10/19	14 20											
CP(S)-G		0005					2.700		0.22	820	9	
77/10/19	16 00											
78/03/08	10 00											
CP(S)-G		0005	0.000				4.600		0.67		13	300
78/03/08	11 00											
78/04/20	12 00											
CP(S)-G											3	30
78/04/20	13 00											
78/04/25	12 00											
CP(S)-G		0005	0.570				1.500		0.42			
78/04/25	13 00											
78/05/15	15 15											
CP(S)-G		0005	0.470				2.000		0.50		3	40
78/05/15	16 15											
78/08/15	11 10											
CP(S)-G		0005								11		60
78/08/15	11 10											
	11 10											
CP(S)-G		0005	0.060				1.900					
78/08/15	11 30											
78/10/03	12 00											
CP(S)-G		0005								11		80
78/10/03	12 00											
	12 00											
CP(S)-G		0005	0.690				1.500					
78/10/03	13 00											
79/02/13	12 00											
CP(S)-G		0005	0.630				1.900		0.38			95
79/02/13	14 00											
79/05/01	11 00											
CP(S)-G		0005	0.000				1.800		0.39	350	4	50
79/05/01	12 00											
	12 00											
CP(S)-G		0005	0.000				1.800		0.39	350	4	50
79/06/01	12 00									840		60
CP(S)-G		0000					0.100		0.37		5	
		0005	0.060									
79/06/01	13 00											
79/07/17	12 00									1680		100
CP(S)-G		0000							0.41		14	
		0005	0.030			0.000	1.900					
79/07/17	13 00											
79/08/14	11 00									1540	16	120
CP(S)-G		0005										
79/08/14	12 00											
	12 00						1.800		0.78			
CP(S)-G		0005	0.010									
79/08/14	13 00											
79/10/02	12 00											
CP(B)-G	AVE	0005	0.070				1.800		0.64	2360	15	134
79/10/02	13 00											
80/04/28	13 50											
CP(S)-G		0005	0.030									
80/04/28	14 00											
80/05/20	10 30											
CP(S)-G		0005	0.040									
80/05/20	11 00											
80/07/08	07 30											
CP(S)-G		0005	0.000									
80/07/08	07 40											
	07 30											
CP(S)-G		0005	0.000									
80/07/08	07 50											
80/08/19	13 50											
CP(S)-G		0005	0.020				1.900			1440	8	
80/08/19	14 10											
80/09/09	10 30											
CP(S)-G		0005	0.000							2510	7	
80/09/09	10 50											

SPRING CREEK BASIN

LAKE POCASSE AT POLLOCK, SD (LAT 45 54 30 LONG 100 17 30)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
77/10/19	14 20											
CP(S)-G		0005	0.00	15	0	6	6	910	30	129	56.0	
77/10/19	16 00											
78/03/08	10 00											
CP(S)-G		0005	0.00	1	0	15		340	60			0.2
78/03/08	11 00											
78/04/20	12 00											
CP(S)-G			0.00	2	0	5		1840	10			0.3
78/04/20	13 00											
78/05/15	15 15											
CP(S)-G		0005	0.00	9	0	6		1700	10			0.6
78/05/15	16 15											
78/08/15	11 10											
CP(S)-G		0005	0.00	1	0	5		400	10			0.5
78/08/15	11 10											
78/10/03	12 00											
CP(S)-G		0005	0.00	1	0	5		1900	10			0.0
78/10/03	12 00											
79/02/13	12 00											
CP(S)-G		0005	0.00	1	0	10		480	36			0.5
79/02/13	14 00											
79/05/01	11 00											
CP(S)-G		0005	0.00	2	0	4	4	360	10	37	22.0	0.7
79/05/01	12 00											
	12 00											
CP(S)-G		0005	0.00	2	0	4	4	360	10	37	22.0	
79/05/01	13 00											
79/06/01	12 00											
CP(S)-G		0000	0.00	4	0	9	0	1000	16	38		
		0005									23.0	0.6
79/06/01	13 00											
79/07/17	12 00											
CP(S)-G		0000	1.00	3	6	9	9	1830	10	40		
		0005									23.0	
79/07/17	13 00											
79/08/14	11 00											
CP(S)-G		0005	0.00	1	0	1	3	1270	10	40		
79/08/14	12 00											
79/08/14	12 00											
CP(S)-G		0005										0.4
79/08/14	13 00											
79/10/02	12 00											
CP(B)-G	AVE	0005	0.00	3	10	6	7	2140	16	49	28.0	0.3
79/10/02	13 00											
80/04/28	13 50											
CP(S)-G		0005									24.0	0.5
80/04/28	14 00											
80/05/20	10 30											
CP(S)-G		0005									22.0	0.0
80/05/20	11 00											
80/07/08	07 30											
CP(S)-G		0005									35.0	0.3
80/07/08	07 40											
	07 30											
CP(S)-G		0005									35.0	
80/07/08	07 50											
80/08/19	13 50											
CP(S)-G		0005	0.00	2	10	5		1360	0	99	42.0	0.3
80/08/19	14 10											
80/09/09	10 30											
CP(S)-G		0005	0.00	0		6		2360	133	81	41.0	0.4
80/09/09	10 50											

SPRING CREEK BASIN

LAKE POCASSE AT POLLOCK, SD (LAT 45 54 30 LONG 100 17 30)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
77/10/19 CP(S)-G 77/10/19	14 20 16 00	0005	0	18				32			329.0
78/03/08 CP(S)-G 78/03/08	10 00 11 00	0005		24	1	4.0		51	49.00	360.00	
78/04/20 CP(S)-G 78/04/20	12 00 13 00			8	0	1.0		55	10.00	20.00	
78/05/15 CP(S)-G 78/05/15	15 15 16 15	0005		10	0	0.0		30	11.00	20.00	
78/07/25 CP(S)-G 78/07/25	17 30 18 00	0005		4	0						
78/08/15 CP(S)-G 78/08/15	11 10 11 10	0005		9	0	0.0		26	14.40	35.00	
78/10/03 CP(S)-G 78/10/03	12 00 12 00	0005		6	0	1.0		14		416.00	
CP(S)-G 78/10/03	12 00 13 00	0005							16.40	41.60	
79/02/13 CP(S)-G 79/02/13	12 00 14 00	0005		12	1			33	20.30	72.00	
79/05/01 CP(S)-G 79/05/01	11 00 12 00	0005	0	0	0	0.0	0	31	14.00	72.00	224.0
CP(S)-G 79/05/01	12 00 13 00	0005	0	0			0	31	14.00	72.00	224.0
79/06/01 CP(S)-G	12 00	0000 0005	0	1	0	0.0	20	27	15.00	52.00	178.0
79/07/17 CP(S)-G 79/07/17	12 00 13 00	0000 0005	0	8	0	1.0	20	30	17.00	56.00	430.0
79/08/14 CP(S)-G 79/08/14	11 00 12 00	0005	0	15	0	0.0	0	21			570.0
CP(S)-G 79/08/14	12 00 13 00	0005							17.00	60.00	
79/10/02 CP(B)-G 79/10/02	12 00 AVE 13 00	0005	0	10	0	0.0	0	19	18.00	68.00	530.0
80/07/08 CP(S)-G 80/07/08	07 30 07 40	0005								94.00	
CP(S)-G 80/07/08	07 30 07 50	0005								94.00	
80/08/19 CP(S)-G 80/08/19	13 50 14 10	0005		10	1	0.0		30		108.00	250.0
80/09/09 CP(S)-G 80/09/09	10 30 10 50	0005		11	1	0.0		15		110.00	393.0

MISCELLANEOUS WATER QUALITY DATA

CHEYENNE RIVER BASIN

COLD BROOK RESERVOIR AT HOT SPRINGS, SD (LAT 43 27 19 LONG 103 29 19)

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440. HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
77/11/01	14 40											
CP(S)-6		0005	0.010		224		188		8			0.000
77/11/01	14 45											
78/01/25	10 00											
CP(S)-6		0005	0.030				208	28				0.010
78/01/25	11 30											
78/04/11	13 00											
CP(S)-6		0005	0.010				204	27				0.000
78/04/11	14 00											
78/07/11	11 30											
CP(S)-6			0.020	47.0			150	23				0.010
78/07/11	12 20											
78/10/27	11 00											
CP(S)-6		0005	0.010				130	24				0.010
78/10/27	12 30											
79/02/08	11 00											
CP(S)-6		0005	0.010				186	26				0.000
79/02/08	11 00											
79/04/26	11 00											
CP(S)-6		0005	0.030				178	26				0.020
79/04/26	12 00											
79/05/22	11 00											0.030
	11 00											
CP(S)-6		0005	0.030	51.0			162	24		248		
79/05/22	12 00											
79/07/25	11 00											
CP(S)-6		0005	0.020	31.0			116	26		191		
79/07/25	12 00											
	12 00											
CP(S)-6		0005										0.000
79/07/25	13 00											
79/10/16	11 00											
CP(S)-6		0005	0.020	49.0			166	19		225		0.010
79/10/16	12 00											
80/02/14	09 20											
CP(S)-6		0005	0.010	56.0			198	5		254		
80/02/14	10 00											
80/05/29	13 15											
CP(S)-6		0005	0.040	50.0			193	24		246		
80/05/29	13 45											
80/07/01	11 00											
CP(S)-6		0005	0.010	43.0			172	23		221		
80/07/01	11 20											
80/08/13	10 15											
CP(S)-6		0005	0.000	23.0			122	24		170		
80/08/13	10 35											

CHEYENNE RIVER BASIN

COLD BROOK RESERVOIR AT HOT SPRINGS, SD (LAT 43 27 19 LONG 103 29 19)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515 RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
77/11/01	14 40											
CP(S)-6		0005	0.000				1.2		0.140		3.0	9.0
77/11/01	14 45											
78/01/25	10 00											
CP(S)-6		0005	0.000	71	320	2	0.0		0.050		2.0	5.0
78/01/25	11 30											
78/04/11	13 00											
CP(S)-6		0005	0.000	76	404	0	1.0		0.000		2.0	8.0
78/04/11	14 00											
78/07/11	11 30											
CP(S)-6			0.000	95	360	0	2.0				4.0	11.0
78/07/11	12 20											
78/10/27	11 00											
CP(S)-6		0005	0.000	124	382	6	6.0		0.030		3.0	10.0
78/10/27	12 30											
79/02/08	11 00											
CP(S)-6		0005	0.000	112	432	10	2.1		0.510		2.0	3.0
79/02/08	11 00											
79/04/26	11 00											
CP(S)-6		0005	0.000	88	392	0	1.0		0.020		3.0	7.0
79/04/26	12 00											
79/05/22	11 00		0.000									
	11 00											
CP(S)-6		0005		86	348	0	2.0		0.000		3.0	4.0
79/05/22	12 00											
79/07/25	11 00											
CP(S)-6		0005		48	232	2	1.0		0.050		6.0	14.0
79/07/25	12 00											
	12 00											
CP(S)-6		0005	0.000									
79/07/25	13 00											
79/10/16	11 00											
CP(S)-6		0005	0.000	86	354	9	2.0		0.120		6.0	6.0
79/10/16	12 00											
80/02/14	09 20											
CP(S)-6		0005		75	348	2	2.0	120	0.070	0.010		
80/02/14	10 00											
80/05/29	13 15											
CP(S)-6		0005		70	336	0	1.0		0.120	0.020		
80/05/29	13 45											
80/07/01	11 00											
CP(S)-6		0005		63	322	0	0.0	108	0.090	0.010		
80/07/01	11 20											
80/08/13	10 15											
CP(S)-6		0005		64	258	0	3.0	130	0.050	0.000		
80/08/13	10 35											

CHEYENNE RIVER BASIN

COLD BROOK RESERVOIR AT HOT SPRINGS, SD (LAT 43 27 19 LONG 103 29 19)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
77/11/01	14 40											
CP(S)-6		0005	0.100				0.510		0.01			
77/11/01	14 45											
78/01/25	10 00											
CP(S)-6		0005	0.210				0.500		0.01	2		100
78/01/25	11 30											
78/04/11	13 00											
CP(S)-6		0005	0.140				0.200		0.01	5		80
78/04/11	14 00											
78/07/11	11 30											
CP(S)-6			0.000				0.100		0.00	5		50
78/07/11	12 20											
78/10/27	11 00											
CP(S)-6		0005								4		57
78/10/27	11 00											
	11 00											
CP(S)-6		0005	0.000				0.500		0.01			
78/10/27	12 30											
79/02/08	11 00											
CP(S)-6		0005	0.140				0.200		0.01			
79/02/08	11 00											
	11 00											
CP(S)-6		0005										90
79/02/08	12 00											
79/04/26	11 00											
CP(S)-6		0005		0.00			0.400		0.02		4	90
79/04/26	12 00											
79/05/22	11 00											
CP(S)-6		0005	0.000				0.500		0.01		5	
79/05/22	12 00											
	12 00											
CP(S)-6		0005										60
79/05/22	13 00											
79/07/25	11 00											
CP(S)-6		0005	0.000				0.800		0.01	80	6	70
79/07/25	12 00											
79/10/16	11 00											
CP(S)-6		0005	0.030				0.900		0.02		5	100
79/10/16	12 00											
80/02/14	09 20											
CP(S)-6		0005	0.160							140	6	
80/02/14	10 00											
80/05/29	13 15											
CP(S)-6		0005	0.010									
80/05/29	13 45											
80/07/01	11 00											
CP(S)-6		0005	0.010				0.520					
80/07/01	11 20											
80/08/13	10 15											
CP(S)-6		0005	0.010							0	4	
80/08/13	10 35											

CHEYENNE RIVER BASIN

COLD BROOK RESERVOIR AT HOT SPRINGS, SD (LAT 43 27 19 LONG 103 29 19)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
77/11/01	14 40											
CP(S)-6		0005										0.0
77/11/01	14 45											
78/01/25	10 00											
CP(S)-6		0005	0.00	0	0	3		20	20			0.0
78/01/25	11 30											
78/04/11	13 00											
CP(S)-6		0005	0.00	0	0	2		20	20			0.0
78/04/11	14 00											
78/07/11	11 30											
CP(S)-6			0.00	5	0	6		170	20			0.6
78/07/11	12 20											
78/10/27	11 00											
CP(S)-6		0005	0.00	4	0	4		50	10			0.4
78/10/27	11 00											
79/02/08	11 00											
CP(S)-6		0005	0.00	7	0	6		40	30			0.2
79/02/08	12 00											
79/04/26	11 00											
CP(S)-6		0005	0.00	15	0			40	40			0.5
79/04/26	12 00											
79/05/22	11 00											
CP(S)-6		0005									30.0	0.5
79/05/22	12 00											
	12 00											
CP(S)-6		0005	0.00	6	0			90	7			
79/05/22	13 00											
79/07/25	11 00											
CP(S)-6		0005	1.00	8	0			130	10		28.0	0.7
79/07/25	12 00											
79/10/16	11 00											
CP(S)-6		0005	0.00	2	12			90	22		25.0	0.8
79/10/16	12 00											
80/02/14	09 20											
CP(S)-6		0005	0.00	2	7	3		109	16	33	29.0	0.0
80/02/14	10 00											
80/05/29	13 15											
CP(S)-6		0005									29.0	0.6
80/05/29	13 45											
80/07/01	11 00											
CP(S)-6		0005									25.0	0.2
80/07/01	11 20											
80/08/13	10 15											
CP(S)-6		0005	0.00	0	14	0		32	0	43	27.0	0.4
80/08/13	10 35											

CHEYENNE RIVER BASIN

COLD BROOK RESERVOIR AT HOT SPRINGS, SD (LAT 43 27 19 LONG 103 29 19)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
78/01/25	10 00										
CP(S)-6		0005		5	2	1.0		21		24.00	
78/01/25	11 30										
78/04/11	13 00										
CP(S)-6		0005		4	1	1.0		3		24.00	
78/04/11	14 00										
78/07/11	11 30										
CP(S)-6				10	1	1.0		28	4.00	22.00	
78/07/11	12 20										
78/10/27	11 00										
CP(S)-6		0005		10	0	0.0		20		82.00	
78/10/27	11 00										
79/02/08	11 00										
CP(S)-6		0005		0	2			22		80.00	
79/02/08	12 00										
79/04/26	11 00										
CP(S)-6		0005		0	1	0.0		65			
79/04/26	12 00										
79/05/22	11 00										
CP(S)-6		0005							4.00	21.00	
79/05/22	12 00										
	12 00										
CP(S)-6		0005		0	2	0.0		14			
79/05/22	13 00										
79/07/25	11 00										
CP(S)-6		0005		5	1	0.0		56			
79/07/25	12 00										
79/10/16	11 00										
CP(S)-6		0005		5	1	0.0		41		23.00	
79/10/16	12 00										
80/02/14	09 20										
CP(S)-6		0005		4	1	1.0		4		28.00	4.0
80/02/14	10 00										
80/08/13	10 15										
CP(S)-6		0005		0	2	0.0		17		23.00	0.0
80/08/13	10 35										

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR DAM, SD (LAT 44 27 00 LONG 100 25 00)

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440 HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
77/10/20	10 35	0060	0.000									0.020
	10 35											
CP(S)-6		0005	0.020									
77/10/20	13 00											
78/03/07	10 30	0001	0.010									0.010
	10 30	0090	0.030									0.020
	10 30											
CP(S)-6		0005			205		168	10	10		0.50	
78/03/07	12 30											
78/04/24	13 30	0045	0.010									0.000
	13 30											
CP(S)-6		0005			202		166	10	10	239	0.40	
78/04/24	14 45											
78/05/17	08 00	0075	0.010									0.000
	08 00											
CP(S)-6		0005			202		166	9	3	240	0.40	
78/05/17	10 00											
78/08/16	07 30	0060	0.010									0.010
	07 30											
CP(S)-6		0005			190		156	10	5	258	0.40	
78/08/16	08 30											
78/09/13	11 00											
CP(S)-6		0005	0.020									
78/09/13	11 45											
78/10/12	10 30											
CP(S)-6		0005		55.0	193		158	10		255	0.40	
78/10/12	10 30											
79/02/12	16 00											
CP(S)-6		0055	0.010									
79/02/12	17 00											
	16 00											
CP(S)-6		0000	0.010									0.010
		0005			216		177	13	25	256	0.55	
		0055										0.010
79/02/12	18 00											
79/04/30	11 00											
CP(S)-6		0000	0.010									0.000
		0055	0.010									0.000
79/05/02	41 00											
CP(S)-6		0055	0.030									0.010
79/05/02	41 00											
79/05/24	11 00											
CP(S)-6		0000	0.040									0.030
79/05/24	11 00											
	11 00											
CP(S)-6		0005		62.0			170	11	15	256	0.70	
79/05/24	12 00											
79/07/18	11 00											
CP(S)-6		0005		60.0			158	9	5	253	0.50	
79/07/18	12 00											
	12 00											
CP(S)-6		0000	0.000									0.010
		0055	0.010									
79/07/18	13 00											
	12 00											
CP(S)-6		0055										0.010
79/07/18												
79/08/07	12 00											
CP(S)-6		0005	0.010									
79/08/07	13 00											
79/08/13	11 00											
CP(S)-6		0000	0.010									
		0005		57.0			164	10	5	244	0.10	
		0055	0.020									
79/08/13	12 00											
	12 00											
CP(S)-6		0055										0.000
79/08/13	13 00											
79/08/14	12 00											
CP(S)-6		0005	0.030	56.0			166	10	10		0.30	
79/08/14	13 00											
79/09/06	12 00											
CP(S)-6		0005	0.000									

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR DAM, SD (LAT 44 27 00 LONG 100 25 00)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440 HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
79/10/01	12 00											
CP(S)-6		0000	0.000									0.000
		0005		58.0			166	11	5	240	0.50	
		0055	0.010									0.000
79/10/01	13 00											
80/04/21	09 50											
CP(S)-6		0005	0.020	42.0			168	11		256		
80/04/21	10 00											
80/05/23	09 25											
CP(S)-6		0005	0.030	62.0			166	12		256		
80/05/23	09 45											
80/06/26	11 00											
CP(S)-6		0005	0.010									
80/06/26	12 00											
80/07/10	10 30											
CP(S)-6		0005	0.010	61.0			170	9		255		
80/07/10	10 40											
	10 30											
CP(S)-6		0005	0.010	61.0			170	9		255		
80/07/10	10 50											
80/08/06	16 45						308					0.040
80/08/11	10 15											
CP(S)-6		0005	0.010	60.0			172	14		256		
80/08/11	10 35											
80/08/14	14 00											
CP(S)-6		0005	0.020				174	10		255		
80/08/14	14 30											
80/09/12	11 00											
CP(S)-6		0005	0.000	57.0			170	10		254		
80/09/12	11 20											
80/09/18	14 00											
CP(S)-6		0005	0.010				174	10		252		
80/09/18	14 30											

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515 RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
77/10/20	10 35	0060	0.000						0.010		3.0	5.0
	10 35											
CP(S)-6		0005							0.010		3.0	3.0
77/10/20	13 00											
78/03/07	10 30	0001	0.000						0.040		3.0	4.0
	10 30	0090	0.000						0.020		3.0	6.0
	10 30											
CP(S)-6		0005		185	516	0	0.0	246				
78/03/07	12 30											
78/04/24	12 30	0001							0.010			
	13 30	0045	0.000						0.010		3.0	8.0
	13 30											
CP(S)-6		0005		198	506	2	2.0	200				
78/04/24	14 45											
78/05/17	08 00	0075	0.000						0.010		3.0	8.0
	08 00											
CP(S)-6		0005		200	482	16	1.0	160				
78/05/17	10 00											
78/08/16	07 30	0060	0.010						0.030		4.0	14.0
	07 30											
CP(S)-6		0005		199	516	3	15.0	0				
78/08/16	08 30											
78/09/13	11 00											
CP(S)-6		0005							0.140		6.0	
78/09/13	11 45											
78/10/12	10 30											
CP(S)-6		0000	0.000						0.070		4.0	12.0
		0005		242	502	4		190				
		0055	0.000						0.030		4.0	9.0
78/10/12	10 30											
79/02/12	16 00											
CP(S)-6		0055						243	0.000			7.0
79/02/12	17 00											
	16 00											
CP(S)-6		0000	0.000						0.000		4.0	8.0
		0005		230	554	5	0.9	190				
		0055	0.000									
79/02/12	18 00											

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR DAM, SD (LAT 44 27 00 LONG 100 25 00)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
79/08/14 CP(S)-6 79/08/14	12 00 13 00	0005										0.7
79/10/01 CP(S)-6 79/10/01	12 00 13 00	0005	0.00	6	7	4	8	302	30	37	23.0	0.4
80/04/21 CP(S)-6 80/04/21	09 50 10 00	0005									32.0	0.2
80/05/23 CP(S)-6 80/05/23	09 25 09 45	0005									22.0	0.5
80/07/10 CP(S)-6 80/07/10	10 30 10 40	0005									25.0	0.3
CP(S)-6 80/07/10	10 30 10 50	0005									25.0	
80/08/11 CP(S)-6 80/08/11	10 15 10 35	0005	0.00	2	7	0		73	0	50	26.0	0.3
80/09/12 CP(S)-6 80/09/12	11 00 11 20	0005	0.00	0		13		121	0	49	27.0	0.0

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
77/10/20 CP(S)-6 77/10/20	10 35 13 00	0005	0	11	2	1.0	0	21			6.0
78/03/07 CP(S)-6 78/03/07	10 30 12 30	0005	0	7	1	1.0	0	53		64.00	8.0
78/04/24 CP(S)-6 78/04/24	13 30 14 45	0005	0	8	0	1.0	0	21		72.00	6.0
78/05/17 CP(S)-6 78/05/17	08 00 10 00	0005	0	10	1	0.0	0	10		72.00	4.0
78/08/16 CP(S)-6 78/08/16	07 30 07 30	0005		11	2	1.0	0	44		64.00	
CP(S)-6 78/08/16	07 30 08 30	0005	0								11.0
78/10/12 CP(S)-6 78/10/12	10 30 10 30	0005		3	0	0.0			5.60	66.00	16.0
79/02/21 CP(S)-6 79/02/21	16 00 18 00	0005		11	0		0	38	5.50	77.00	6.0
79/05/24 CP(S)-6 79/05/24	11 00 12 00	0005							5.00	80.00	
CP(S)-6 79/05/24	12 00 13 00	0005	0	14	2	1.0	20	70			26.0
79/07/16 CP(S)-6 79/07/16	11 00 12 00	0005	0	9	1	1.0	0	31	5.00	76.00	19.0
79/08/13 CP(S)-6 79/08/13	11 00 12 00	0005	0	13	1	0.0	0	77	5.00	72.00	40.0

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR DAM, SD (LAT 44 27 00 LONG 100 25 00)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515 RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
79/04/30	11 00											
CP(S)-G		0000	0.000						0.000		4.0	13.0
		0055	0.000						0.020		4.0	10.0
79/04/30	12 00											
79/05/02	41.00											
CP(S)-G		0055	0.000						0.010		4.0	7.0
79/05/02	41 00											
79/05/24	11 00											
CP(S)-G		0000	0.000						0.020		5.0	19.0
79/05/24	11 00											
	11 00											
CP(S)-G		0005		224	550	10	3.0	150				
79/05/24	12 00											
79/07/18	11 00											
CP(S)-G		0005		238	478	7	6.0	219				
79/07/18	12 00											
	12 00											
CP(S)-G		0000	0.000						0.020		5.0	9.0
		0055							0.020		4.0	5.0
79/07/18	13 00											
	12 00											
CP(S)-G		0055	0.000									
79/07/18												
79/08/07	12 00											
CP(S)-G		0005							0.050		6.0	15.0
79/08/07	13 00											
79/08/13	11 00											
CP(S)-G		0000							0.010		4.0	8.0
		0005		218	518	3		160				
		0055							0.030		5.0	12.0
79/08/13	12 00											
	12 00											
CP(S)-G		0000	0.000									
		0055	0.000									
79/08/13	13 00											
79/08/14	11 00											
CP(S)-G		0005									4.0	
79/08/14	12 00											
79/08/14	12 00											
CP(S)-G		0005		210	476	6	7.0	200	0.020			12.0
79/08/14	13 00											
79/09/06	12 00											
CP(S)-G		0005							0.050		5.0	12.0
79/09/06	13 00											
79/10/01	12 00											
CP(S)-G		0000	0.000						0.000		4.0	6.0
		0005		203	492	2	1.0	0.1				
		0055	0.010						0.010		5.0	10.0
79/10/01	13 00											
80/04/21	09 50											
CP(S)-G		0005		200	578	5	2.0		0.000			
80/04/21	10 00											
80/05/23	09 25											
CP(S)-G		0005		268	526	0	1.0		0.120	0.010		
80/05/23	09 45											
80/06/26	11 00											
CP(S)-G		0005							0.060	0.010		
80/06/26	12 00											
80/07/10	10 30											
CP(S)-G		0005		235	514	0	1.0	153	0.020	0.000		
80/07/10	10 40											
	10 30											
CP(S)-G		0005		235	514	0	1.0	153	0.020	0.000		
80/07/10	10 50											
80/08/11	10 15											
CP(S)-G		0005		219	564	3	3.0	200	0.000	0.000		
80/08/11	10 35											
80/08/14	14 00											
CP(S)-G		0005		258	532	3	2.0		0.060	0.010		
80/08/14	14 30											
80/09/12	11 00											
CP(S)-G		0005		240	578	9	1.0		0.000	0.000		
80/09/12	11 20											
80/09/18	14 00											
CP(S)-G		0005		242	584	3	1.0		0.070			
80/09/18	14 30											

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR DAM, SD (LAT 44 27 00 LONG 100 25 00)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
77/10/20	10 35	0060	0.090				0.200		0.00			
	10 35											
CP(S)-G		0005	0.090				0.200		0.00	50	2	20
77/10/20	13 00											
78/03/07	10 30	0001	0.090				0.400		0.00			
	10 30	0090	0.090				0.300		0.00			
	10 30											
CP(S)-G		0005								40	2	30
78/03/07	12 30											
78/04/24	13 30	0045	0.100				0.200		0.01			
	13 30											
CP(S)-G		0005								50	2	30
78/04/24	14 45											
78/05/17	08 00	0075	0.110				0.100		0.01			
	08 00											
CP(S)-G		0005								50	2	30
78/05/17	10 00											
78/08/16	07 30	0060	0.170				0.600		0.01			
	07 30											
CP(S)-G		0005								220	2	40
78/08/16	08 30											
78/09/13	11 00											
CP(S)-G		0005	0.190				0.800		0.01			
78/09/13	11 45											
78/10/12	10 30											
CP(S)-G		0000	0.150						0.01			
		0005								140	2	30
		0055	0.200						0.02			
78/10/12	10 30											
79/02/12	16 00											
CP(S)-G		0055	0.170				0.300		0.00			
79/02/12	17 00											
	16 00											
CP(S)-G		0000	0.190				0.300		0.01			
79/02/12	18 00											
79/02/21	16 00											
CP(S)-G		0005								45		45
79/02/21	18 00											

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
79/04/30	11 00											
CP(S)-G		0000	0.000				0.500		0.01			
		0055	0.140				0.400		0.01			
79/04/30	12 00											
79/05/02	41 00											
CP(S)-G		0055	0.130				0.500		0.01			
79/05/02	41 00											
79/05/24	11 00											
CP(S)-G		0000	0.120				0.600		0.01			
79/05/24	11 00											
	11 00											
CP(S)-G		0005									2	
79/05/24	12 00											
	12 00											
CP(S)-G		0005								210		30
79/05/24	13 00											
79/07/18	11 00											
CP(S)-G		0005								170	2	40
79/07/18	12 00											
	12 00											
CP(S)-G		0000	0.100				0.400		0.00			
		0055	0.160				0.400					
79/07/18	13 00											
79/08/07	12 00											
CP(S)-G		0005	0.130				0.800		0.01			
79/08/07	13 00											
79/08/13	11 00											
CP(S)-G		0000	0.090				0.300		0.00			
		0005								170	2	
		0055	0.190				0.500		0.01			
79/08/13	12 00											
79/08/14	11 00											
CP(S)-G		0005								210	2	80
79/08/14	12 00											
	12 00											
CP(S)-G		0005	0.080				0.300		0.03			
79/08/14	13 00											

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR DAM, SD (LAT 44 27 00 LONG 100 25 00)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
79/09/06	12 00											
CP(S)-G		0005	0.110				0.500		0.01			
79/09/06	13 00											
79/10/01	12 00											
CP(S)-G		0000	0.070				0.400		0.01			
		0005								180	2	60
		0055	0.170				0.600		0.02			
79/10/01	13 00											
80/04/21	09 50											
CP(S)-G		0005	0.130									
80/04/21	10 00											
80/05/23	09 25											
CP(S)-G		0005	0.070									
80/05/23	09 45											
80/06/26	11 00											
CP(S)-G		0005	0.040									
80/06/26	12 00											
80/07/10	10 30											
CP(S)-G		0005	0.030				0.280					
80/07/10	10 40											
	10 30											
CP(S)-G		0005	0.030				0.280					
80/07/10	10 50											
80/08/06	16 45			0.01								
80/08/11	10 15											
CP(S)-G		0005	0.050							0	2	
80/08/11	10 35											
80/08/14	14 00											
CP(S)-G		0005	0.040									
80/08/14	14 30											
80/09/12	11 00											
CP(S)-G		0005	0.040							110	2	
80/09/12	11 20											
80/09/18	14 00											
CP(S)-G		0005	0.030									
80/09/18	14 30											

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
77/10/20	10 35											
CP(S)-G		0005	0.00	1	0	3	4	86	20	44		0.0
77/10/20	13 00											
78/03/07	10 30											
CP(S)-G		0005	0.00	1	0	6	4	20	30	49		0.2
78/03/07	12 30											
78/04/24	13 30											
CP(S)-G		0005	0.00	0	0	4	3	80	20	49		0.2
78/04/24	14 45											
78/05/17	08 00											
CP(S)-G		0005	0.00	3	0	5	0	70	20	43		0.3
78/05/17	10 00											
78/08/16	07 30											
CP(S)-G		0005	0.00	1	10	7	2	260	10	44		0.4
78/08/16	08 30											
78/10/12	10 30											
CP(S)-G		0005	0.00	1	0	5	0	165	10	46	29.0	0.0
78/10/12	10 30											
79/02/21	16 00											
CP(S)-G		0005	0.00	1	0	9	4	80	11	50	26.0	0.2
79/02/21	18 00											
79/05/24	11 00											
CP(S)-G		0005									25.0	
79/05/24	12 00											
	12 00											
CP(S)-G		0005	0.00	7	0	18	7	450	117	49		3.0
79/05/24	13 00											
79/07/18	11 00											
CP(S)-G		0005	1.00	1	0	6	1	220	10	50	25.0	0.3
79/07/18	12 00											
79/08/13	11 00											
CP(S)-G		0005	0.00	7	0	3	2	158	10	36	25.0	0.6
79/08/13	12 00											
79/08/14	11 00											
CP(S)-G		0005	0.00	1	0	3	3	243	10	41		
79/08/14	12 00											

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR DAM, SD (LAT 44 27 00 LONG 100 25 00)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
79/08/14	11 00										
CP(S)-6		0005	0	11	1	0.0	0	21			68.0
79/08/14	12 00										
	12 00										
CP(S)-6		0005							4.00	80.00	
79/08/14	13 00										
79/10/01	12 00										
CP(S)-6		0005	0	10	1	0.0	0	72	4.00	73.00	18.0
79/10/01	13 00										
80/07/10	10 30										
CP(S)-6		0005								80.00	
80/07/10	10 40										
	10 30										
CP(S)-6		0005								80.00	
80/07/10	10 50										
80/08/11	10 15										
CP(S)-6		0005		8	2	0.0		24		66.00	9.0
80/08/11	10 35										
80/09/12	11 00										
CP(S)-6		0005		9	2	0.0		38		73.00	14.0
80/09/12	11 20										

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

POWERHOUSE OUTFLOW AT BIG BEND, SD (LAT 44 02 13 LONG 99 26 18)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440 HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
77/11/03	13 15	0001	0.030	49.0				11	8		0.52	0.000
78/04/20	13 30	0001		50.0				11	25		0.40	0.030
78/05/15	13 40	0001							15			
78/07/10	12 45	0001	0.010	57.0				10	5	240		
78/08/09	14 00	0001	0.030	58.0				10	5		0.50	
78/10/19	13 50	0001	0.010	54.0	190		156	10	10	227	0.40	0.000
79/04/03	11 00			55.8			170	12	10	237	0.70	0.020
79/05/07	11 00		0.000	59.3			168	11	10	250	0.20	0.000
79/07/09	11 00		0.010	59.0			166		15	249	0.20	0.020
79/08/06	11 00		0.020	58.0			158	10	5	242	3.00	0.010
79/10/15	11 00		0.020	61.0			173	4	5	242	0.40	0.030
80/04/24	14 20											
CP(S)-6		0005	0.010	62.0			161	12		246		
80/04/24	14 40											
80/05/20	17 15	0000	0.030	62.0			164	14		287		
80/07/08	15 10											
CP(S)-6		0005	0.020	60.0			167	10		255		
80/07/08	15 20											
	15 10											
CP(S)-6		0005	0.020	60.0			167	10		255		
80/07/08	15 30											
80/08/12	16 40	0000	0.010	60.0			174	10		264		

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515 RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
77/11/03	13 15	0001	0.000	172	486	9		130	0.020		3.0	7.0
78/04/20	13 30	0001	0.000	159	432	12		163	0.040		5.0	12.0
78/05/15	13 40	0001				17		110				13.0
78/07/10	12 45	0001		197	516	8		142	0.040		3.0	7.0
78/08/09	14 00	0001		203	564	14		170	0.020		4.0	9.0
78/10/19	13 50	0001	0.000	193	498	5		177	0.010		4.0	9.0
79/04/03	11 00		0.000	177	510	9	4.8	190	0.020		4.0	
79/05/07	11 00		0.000	211	508	1	2.0	147	0.010		4.0	10.0
79/07/09	11 00		0.000	216	486	10	146.0		0.030		4.0	8.0
79/08/06	11 00		0.000		490	13	2.0	13	0.030		4.0	12.0
79/10/15	11 00		0.000	253	544		9.0	170	0.040		4.0	54.0
80/04/24	14 20											
CP(S)-6		0005		226	492	3	2.0		0.010			
80/04/24	14 40											
80/05/20	17 15	0000		224	502	3	1.0		0.030	0.000		
80/07/08	15 10											
CP(S)-6		0005		214	498	2	3.0	119	0.010	0.000		
80/07/08	15 20											
	15 10											
CP(S)-6		0005		214	498	2	3.0	119	0.010	0.000		
80/07/08	15 30											
80/08/12	16 40	0000		250	532	6	4.0	190	0.010	0.000		

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
77/11/03	13 15	0001	0.000			0.000	0.300		0.02	250		40
78/04/20	13 30	0001	0.300			0.000	0.500			1500	2	50
78/05/15	13 40	0001				0.000						
78/07/10	12 45	0001	0.110			0.000	0.400		0.01	480	2	40
78/08/09	14 00	0001	0.100			0.000	0.400		0.03	670	2	30
78/10/19	13 50	0001	0.130			0.000	0.300		0.00	100	2	40
79/04/03	11 00		0.100			0.000	0.300	0.01	0.01	250	2	50
79/05/07	11 00		0.020			0.000	0.300		0.09	110	2	40
79/07/09	11 00		0.040			0.000	0.300		0.01	980		100
79/08/06	11 00		0.080				0.400		0.02		2	
	11 00											
CP(S)-6		0005								710		
79/08/06	12 00											
79/10/15	11 00		0.060			0.000	0.400		0.02	220	2	68
80/04/24	14 20											
CP(S)-6		0005	0.060				0.100			170	1	
80/04/24	14 40											
80/05/20	17 15	0000	0.010				0.300					
80/07/08	15 10											
CP(S)-6		0005	0.000									
80/07/08	15 20											
	15 10											
CP(S)-6		0005	0.000									
80/07/08	15 30											
80/08/12	16 40	0000	0.010				0.400			130	2	

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

POWERHOUSE OUTFLOW AT BIG BEND, SD (LAT 44 02 13 LONG 99 26 18)

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
77/11/03	13 15	0001	0.00	2	10	5	4	350	20	48	21.0	0.0
78/04/20	13 30	0001	0.00		0	4	5		30	43	17.0	0.0
78/05/15	13 40	0001	0.00							38		0.0
78/07/10	12 45	0001	0.00	3	3	4	5		40	47	24.0	0.0
78/08/09	14 00	0001	0.00	0	10	3	1	600	10	36	25.0	0.0
78/10/19	13 50	0001	0.00	4	0	3	0	80	30	36	22.0	0.4
79/04/03	11 00		0.00	10	0	4	1	660	70	48	23.8	0.0
79/05/07	11 00		0.00	3	0	4	5	120	27	50	24.7	0.0
79/07/09	11 00		0.00	0	4	6	9	3000	10	45	25.0	0.2
79/08/06	11 00										23.0	1.0
	11 00											
CP(S)-G		0005	1.00	0	0	4	6	500	10	47		
79/08/06	12 00											
79/10/15	11 00		0.00	1	11	11	6	218	10	43	22.0	0.6
80/04/24	14 20											
CP(S)-G		0005	0.00	0	0	0		144	0	43	22.0	0.0
80/04/24	14 40											
80/05/20	17 15	0000									30.0	0.0
80/07/08	15 10											
CP(S)-G		0005									25.0	0.0
80/07/08	15 20											
	15 10											
CP(S)-G		0005									25.0	
80/07/08	15 30											
80/08/12	16 40	0000	0.00	0	7	0		171	0	48	28.0	0.0

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
77/11/03	13 15	0001	0	12	2	1.0	0	9		64.00	48.0
78/04/20	13 30	0001	0	10	2	1.0		12		56.00	158.0
78/05/15	13 40	0001	0	10							
78/07/10	12 45	0001	0	10		1.0				64.00	34.0
78/08/09	14 00	0001		6	1	0.0		5		68.00	73.0
78/10/19	13 50	0001	0	10	1	0.0		6	5.50	152.00	10.0
79/04/03	11 00		0	10	2	0.0		0			17.0
79/05/07	11 00		0	0	2	0.0		0			13.0
79/07/09	11 00		20	5	0	1.0		9			26.0
79/08/06	11 00								5.00	88.00	
	11 00										
CP(S)-G		0005	0	11	1	0.0	20	5			46.0
79/08/06	12 00										
79/10/15	11 00		0	6	1	1.0		25			29.0
80/04/24	14 20										
CP(S)-G		0005			1	0.0		5			
80/04/24	14 40										
80/07/08	15 10										
CP(S)-G		0005								90.00	
80/07/08	15 20										
	15 10										
CP(S)-G		0005								90.00	
80/07/08	15 30										
80/08/12	16 40	0000		10	2	0.0		5		76.00	35.0

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE FRANCIS CASE NEAR ELM CREEK, SD (LAT 43 33 38 LONG 99 19 20)

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440 HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
78/03/09 CP(S)-6 78/03/09	15 00 17 00	0005	0.010		207		170	13	15	265	0.70	0.010
78/04/20 CP(S)-6 78/04/20	12 30 13 30	0005	0.030		190		156	9	25	232	0.50	0.010
78/05/18 CP(S)-6 78/05/18	09 00 10 30	0005	0.050		173		142	10	25	200	0.40	0.010
78/07/19 CP(S)-6 78/07/19	13 00 14 00	0005	0.110									
78/07/21 CP(S)-6 78/07/21	09 15 10 00	0005	0.020									0.020
78/08/09 CP(S)-6 78/08/09	13 00 14 00		0.120									
78/08/16 CP(S)-6 78/08/16	16 00 17 30	0005	0.010		193		158	10	5	264	0.60	
CP(S)-6 78/08/16	17 30 18 30											0.000
78/08/30 CP(S)-6 78/08/30	11 30 12 00	0005	0.060									
78/10/11 CP(S)-6 78/10/11	12 00 12 00	0005			190		156	10	15	246	0.40	
79/02/22 CP(S)-6 79/02/22	09 45 11 00	0005	0.020		197		161	13	10	244	0.60	0.030
79/05/02 CP(S)-6 79/05/31	12 00 11 00	0005	0.030	58.1			158	10	20	233	0.40	0.000
CP(S)-6 79/05/31	11 00 12 00	0005	0.030	62.0			168	12	15	257	0.50	0.000
79/06/21	11 00	0000	0.300									
79/07/19 CP(S)-6 79/07/19	11 00 12 00	0005	0.010	52.0			142	10	5	232	0.60	
CP(S)-6 79/07/19	12 00 13 00	0005										0.000
79/08/01 CP(S)-6 79/08/01	12 00 13 00	0005	0.050									
79/08/16 CP(S)-6 79/08/16	11 00 12 00	0005	0.020	54.0			162	10	5	220		
CP(S)-6 79/08/16	12 00 13 00	0005										0.000
79/08/29 CP(S)-6 79/08/29	12 00 13 00	0005	0.050									
79/10/04 CP(S)-6 79/10/04	12 00 13 00	0005	0.020	61.0			174	4	5	244	0.60	0.010
80/04/23 CP(S)-6 80/04/23	07 20 07 30	0005	0.030	62.0			159	10		233		
80/05/21 CP(S)-6 80/05/21	08 40 09 00	0005	0.050	62.0			165	13		255		
80/07/09 CP(S)-6 80/07/09	07 25 07 45	0005	0.030	62.0			168	10		260		
80/08/14 CP(S)-6 80/09/10	11 10 08 05	0005	0.010	60.0			172	10		256		
CP(S)-6 80/09/10	08 25	0005	0.000	59.0			170	11		264		

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE FRANCIS CASE NEAR ELM CREEK, SD (LAT 43 33 38 LONG 99 19 20)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515 RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
78/03/09	15 00											
CP(S)-G		0005	0.000	203	548		1.0	167	0.020		3.0	5.0
78/03/09	17 00											
78/04/20	12 30											
CP(S)-G		0005	0.000	163	476		3.0	164	0.040		6.0	13.0
78/04/20	13 30											
78/05/16	09 00											
CP(S)-G		0005	0.000	181	428		5.0	150	0.030		5.0	21.0
78/05/16	10 30											
78/07/19	13 00											
CP(S)-G		0005							0.060		6.0	16.0
78/07/19	14 00											
78/07/21	09 15											
CP(S)-G		0005	0.000	208			11.0		0.040		3.0	
78/07/21	10 00											
78/08/09	13 00											
CP(S)-G									0.110		9.0	
78/08/09	14 00											
78/08/16	16 00											
CP(S)-G		0005		209	540		23.0	170	0.010		4.0	7.0
78/08/16	17 30											
	17 30											
CP(S)-G			0.000									
78/08/16	18 30											
78/08/30	11 30											
CP(S)-G		0005							0.080		6.0	
78/08/30	12 00											
78/10/11	12 00											
CP(S)-G		0005	0.000	212	516			310	0.060		5.0	12.0
78/10/11	12 00											
79/02/22	09 45											
CP(S)-G		0005	0.000	127	544		1.9	160	0.060		4.0	8.0
79/02/22	11 00											
79/05/02	12 00											
CP(S)-G		0005	0.000	199	474	17	10.0	143	0.020		4.0	10.0
79/05/31	11 00		0.000									
	11 00											
CP(S)-G		0005		216	552	14		172	0.020		4.0	7.0
79/05/31	12 00											
79/06/21	11 00	0000							0.160		9.0	27.0
79/07/19	11 00											
CP(S)-G		0005		226	370	30	25.0	172	0.000		4.0	7.0
79/07/19	12 00											
	12 00											
CP(S)-G		0005	0.000									
79/07/19	13 00											
79/08/01	12 00											
CP(S)-G		0005							0.070		6.0	14.0
79/08/01	13 00											
79/08/16	11 00											
CP(S)-G		0005		231	532	11	7.0	0.3	0.020		4.0	8.0
79/08/16	12 00											
	12 00											
CP(S)-G		0005	0.000									
79/08/16	13 00											
79/08/29	12 00											
CP(S)-G		0005							0.060		5.0	13.0
79/08/29	13 00											
79/10/04	12 00											
CP(S)-G		0005	0.000	223	548	8	7.0	288	0.020		4.0	12.0
79/10/04	13 00											
80/04/23	07 20											
CP(S)-G		0005		225	500	13	8.0		0.010			
80/04/23	07 30											
80/05/21	08 40											
CP(S)-G		0005		240	510	5	6.0		0.070	0.010		
80/05/21	09 00											
80/07/09	07 25											
CP(S)-G		0005		226	554	8	6.0	163	0.000	0.000		
80/07/09	07 45											
80/08/14	11 10											
CP(S)-G		0005		240	548	5	3.0	160	0.000	0.000		
80/09/10	08 05											
CP(S)-G		0005		240	562	16	6.0	180	0.000	0.000		
80/09/10	08 25											

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE FRANCIS CASE NEAR ELM CREEK, SD (LAT 43 33 38 LONG 99 19 20)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
78/03/09 CP(S)-G 78/03/09	15 00 17 00	0005	0.100				0.200		0.01	80	2	40
78/04/20 CP(S)-G 78/04/20	12 30 13 30	0005	0.000				0.500		0.03	420	2	30
78/05/18 CP(S)-G 78/05/18	09 00 10 30	0005	0.030				0.600		0.03	440	2	30
78/07/19 CP(S)-G 78/07/19	13 00 14 00	0005	0.090				0.700		0.11			
78/07/21 CP(S)-G 78/07/21	09 15 10 00	0005	0.090				0.400		0.02	940	2	40
78/08/09 CP(S)-G 78/08/09	13 00 14 00		0.090				1.300		0.10			
78/08/16 CP(S)-G 78/08/16	16 00 17 30	0005	0.100				0.300		0.01	830	2	
78/08/30 CP(S)-G 78/08/30	11 30 12 00	0005	0.120				0.800		0.06			
78/10/11 CP(S)-G 78/10/11	12 00 12 00	0005	0.120						0.01	600	2	
79/02/22 CP(S)-G 79/02/22	09 45 11 00	0005	0.170				0.400		0.03	60	2	
79/05/02 CP(S)-G 79/05/02	12 00 13 00	0005	0.020				0.500		0.02	720	2	50
79/05/31 CP(S)-G 79/05/31	11 00 12 00	0005	0.050				0.500		0.03		2	
79/05/31 CP(S)-G 79/05/31	12 00 13 00	0005								580		30
79/06/21	11 00	0000	0.020				1.300		0.30			
79/07/19 CP(S)-G 79/07/19	11 00 12 00	0005	0.000				0.300		0.01	350	2	80
79/08/01 CP(S)-G 79/08/01	12 00 13 00	0005	0.070				0.800		0.02			
79/08/16 CP(S)-G 79/08/16	11 00 12 00	0005	0.150				0.200		0.02	690	3	60
79/08/29 CP(S)-G 79/08/29	12 00 13 00	0005	0.040				0.600		0.06			
79/10/04 CP(S)-G 79/10/04	12 00 13 00	0005	0.040				0.500		0.02	460	2	50
80/04/23 CP(S)-G 80/04/23	07 20 07 30	0005	0.070									
80/05/21 CP(S)-G 80/05/21	08 40 09 00	0005	0.000									
80/07/09 CP(S)-G 80/07/09	07 25 07 45	0005	0.000				0.400					
80/08/14 CP(S)-G 80/08/14	11 10 11 30	0005	0.000				0.600			130	2	
80/09/10 CP(S)-G 80/09/10	08 05 08 25	0005	0.000							700	2	

MISSOURI RIVER MAIN STEM

LAKE FRANCIS CASE NEAR ELM CREEK, SD (LAT 43 33 38 LONG 99 19 20)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
78/03/09 CP(S)-6 78/03/09	15 00 17 00	0005	0.00	10	10	9	4	100	30	51		0.3
78/04/20 CP(S)-6 78/04/20	12 30 13 30	0005	0.00	3	0	4	4	260	20	46		0.2
78/05/18 CP(S)-6 78/05/18	09 00 10 30	0005	0.00	32	0	15	10	330	20	39		0.3
78/07/21 CP(S)-6 78/07/21	09 15 10 00	0005	0.00	1	0	11	4	700	30	49		0.4
78/08/16 CP(S)-6 78/08/16	16 00 17 30	0005	0.00	2	0	5	0	560	10	50		0.6
78/10/11 CP(S)-6 78/10/11	12 00 12 00	0005	0.00	3	0	5	0	360	10	46		0.0
79/02/22 CP(S)-6 79/02/22	09 45 11 00	0005	0.00	2	0	9	6	70	30	45		0.4
79/05/02 CP(S)-6 79/05/02	12 00 13 00	0005	0.00	1	0	6	4	880	40	44	21.2	0.6
79/05/31 CP(S)-6 79/05/31	11 00 12 00	0005									25.0	0.9
 CP(S)-6 79/05/31	12 00 13 00	0005	1.00	6	0	8	0	500	14	45		
79/07/19 CP(S)-6 79/07/19	11 00 12 00	0005	1.00	4	0	46	2	400	10	45	25.0	0.8
79/08/16 CP(S)-6 79/08/16	11 00 12 00	0005	0.00	1	0	3	3	415	0	35	21.0	0.4
79/10/04 CP(S)-6 79/10/04	12 00 13 00	0005	0.00	10	0	7	9	352	0	40	22.0	0.1
80/04/23 CP(S)-6 80/04/23	07 20 07 30	0005									19.0	0.2
80/05/21 CP(S)-6 80/05/21	08 40 09 00	0005									22.0	0.4
80/07/09 CP(S)-6 80/07/09	07 25 07 45	0005									26.0	0.3
80/08/14 CP(S)-6 80/08/14	11 10 11 30	0005	0.00	0	7	0		373	0	67	26.0	0.2
80/09/10 CP(S)-6 80/09/10	08 05 08 25	0005	0.00	0		12		422	0	49	28.0	0.4

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE FRANCIS CASE NEAR ELM CREEK, SD (LAT 43 33 38 LONG 99 19 20)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
78/03/09 CP(S)-G 78/03/09	15 00 17 00	0005	0	11	1	1.0	0	55		68.00	14.0
78/04/20 CP(S)-G 78/04/20	12 30 13 30	0005	0	9	1	1.0	0	34		64.00	40.0
78/05/18 CP(S)-G 78/05/18	09 00 10 30	0005	0	10	2	0.0	0	27		60.00	39.0
78/07/21 CP(S)-G 78/07/21	09 15 10 00	0005		10	1	1.0		15		68.00	58.0
78/08/16 CP(S)-G 78/08/16	16 00 17 30	0005		6	1	0.0	0	20		68.00	36.0
78/10/11 CP(S)-G 78/10/11	12 00 12 00	0005		6	1	0.0		46		66.00	21.0
79/02/22 CP(S)-G 79/02/22	09 45 11 00	0005		10	0					76.00	16.0
CP(S)-G 79/02/22	11 00 12 00	0005					0	28			
79/05/02 CP(S)-G 79/05/02	12 00 13 00	0005	0	10			0	36			40.0
79/05/31 CP(S)-G 79/05/31	12 00 13 00	0005	0	0	1	0.0	0	33			30.0
79/07/19 CP(S)-G 79/07/19	11 00 12 00	0005	0	10	1	1.0	20	72			28.0
79/08/16 CP(S)-G 79/08/16	11 00 12 00	0005	0	15	2	0.0	0	19			14.0
79/10/04 CP(S)-G 79/10/04	12 00 13 00	0005	0	10	1	0.0	0	55	5.00	76.00	37.0
80/07/09 CP(S)-G 80/07/09	07 25 07 45	0005								83.00	
80/08/14 CP(S)-G 80/08/14	11 10 11 30	0005		0	2	0.0		7		77.00	12.0
80/09/10 CP(S)-G 80/09/10	08 05 08 25	0005		6		0.0		6		74.00	33.0

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LEWIS AND CLARK LAKE NEAR DAM, SD (LAT 42 52 00 LONG 97 29 30)

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440 HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
77/10/26	09 10											
CP(S)-G		-	0.000		203		166		30		0.58	
77/10/26	10 30											
78/02/21	15 30											
CP(S)-G			0.040		205		168	10	5		0.40	0.020
78/02/21	17 30											
78/04/21	08 30											
CP(S)-G			0.050		205		166	10	20	240	0.50	0.020
78/04/21	09 30											
78/05/19	08 00											
CP(S)-G			0.040		200		164	10	15	237	0.40	0.010
78/05/19	09 30											
78/07/06	14 30											
CP(S)-G			0.050									
78/07/06	15 30											
78/07/18	13 00											
CP(S)-G			0.010									
78/07/18	14 00											
	14 45											
CP(S)-G			0.030									0.130
78/07/18	15 30											
	16 00											
CP(S)-G		0005										0.120
78/07/18	16 20											
78/08/01	13 00											
CP(S)-G			0.050									
78/08/01	14 00											
78/08/17	14 15											
CP(S)-G		0005	0.030		196		162	11	15	250	0.40	0.000
78/08/17	14 40											
78/10/10	12 45											
CP(S)-G		0055										0.000
78/10/10	12 45											
	12 45											
CP(S)-G		0005	0.010									
78/10/10	13 30											
	13 00											
CP(S)-G		0005			195		160	13		252	0.80	
78/10/10	14 30											
78/11/29	10 25											
CP(S)-G		0005	0.020		188		154	9		235	0.29	0.000
78/11/29	10 25											
79/02/23	09 00											
CP(S)-G		0005	0.030		217		177	12	15	252	0.48	0.010
79/02/23	11 00											
79/05/30	11 00											0.000
	11 00											
CP(S)-G		0005	0.040	58.0			162	10	20	237	0.40	
79/05/30	12 00											
78/07/18	16 00											
CP(S)-G		0005	0.020									
79/07/18	16 20											
79/07/19	11 00											
CP(S)-G		0005	0.040	60.0			160	10	5	260	0.50	
79/07/19	12 00											
	12 00											
CP(S)-G		0005										0.020
79/07/19	13 00											
79/08/06	12 00											
CP(S)-G		0005	0.030									
79/08/06	13 00											
79/08/16	11 00											
CP(S)-G		0005	0.030	57.0			166	10	5	239	0.00	
79/08/16	12 00											
	12 00											
CP(S)-G		0005										0.010
79/08/16	13 00											
79/08/29	12 00											
CP(S)-G		0005	0.030									
79/08/29	13 00											
79/09/26	11 00		0.040									
79/09/27	12 30											0.000

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LEWIS AND CLARK LAKE NEAR DAM, SD (LAT 42 52 00 LONG 97 29 30)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440 HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
79/10/04 CP(S)-G 79/10/04	08 40 09 40	0005	0.030	60.0			176	3	5	238	0.40	0.010
80/04/23 CP(S)-G 80/04/23	14 00 14 10	0005	0.030	62.0			164	10		243		
80/06/17 CP(S)-G 80/06/17	11 15 11 30	0005	0.100									
80/07/09 CP(S)-G 80/07/09	14 40 14 50	0005	0.030	61.0			162	10		250		
CP(S)-G 80/07/09	14 40 15 00	0005	0.030	61.0			162	10		250		
80/08/05 CP(S)-G 80/08/05	13 30 13 40	0005	0.120	63.0			164	10		267		
80/08/13 CP(S)-G 80/08/13	13 10 13 30	0005	0.020	65.0			162	9		250		
80/09/10 CP(S)-G 80/09/10	13 55 14 15	0005	0.010	60.0			174	10		258		
CP(S)-G 80/09/10	13 30	0005	0.060				167	12		253		

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515 RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
77/10/26 CP(S)-G 77/10/26	09 10 10 30		0.000	192	402		6.0	130	0.020		4.0	3.0
78/02/21 CP(S)-G 78/02/21	15 30 17 30		0.000	178	510		1.0	240	0.060		4.0	4.0
78/04/21 CP(S)-G 78/04/21	08 30 09 30		0.000	194	474		10.0	206	0.060		4.0	10.0
78/05/19 CP(S)-G 78/05/19	08 00 09 30		0.000	191	486		6.0	130	0.010		5.0	18.0
78/07/06 CP(S)-G 78/07/06	14 30 15 30								0.140		6.0	
78/07/18 CP(S)-G 78/07/18	13 00 14 00								0.010		4.0	
CP(S)-G 78/07/18	14 45 15 30		0.120						0.070		4.0	
CP(S)-G 78/07/18	16 00 16 20	0005	0.110									
78/08/01 CP(S)-G 78/08/01	13 00 14 00								0.080		5.0	
78/08/17 CP(S)-G 78/08/17	14 15 14 40	0005	0.000	195	524		22.0	170			4.0	7.0
78/10/10 CP(S)-G 78/10/10	12 45 13 30	0005							0.010		3.0	10.0
CP(S)-G	13 00	0005	0.000	212	544			250	0.040		5.0	14.0

MISSOURI RIVER MAIN STEM

LEWIS AND CLARK LAKE NEAR DAM, SD (LAT 42 52 00 LONG 97 29 30)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515 RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
78/11/29	10 25											
CP(S)-G		0005	0.000	196	498		7.0	205	0.050		4.0	13.0
78/11/29	10 25											
79/02/23	09 00											
CP(S)-G		0005	0.000	203	502		6.0	177	0.040		4.0	7.0
79/02/23	11 00											
79/05/30	11 00		0.000									
	11 00											
CP(S)-G		0005		194	514	19		132	0.040		4.0	9.0
79/05/30	12 00											
78/07/18	16 00											
CP(S)-G		0005							0.020		4.0	
79/07/18	16 20											
79/07/19	11 00											
CP(S)-G		0005		224	474	20	19.0	212	0.050		5.0	10.0
79/07/19	12 00											
	12 00											
CP(S)-G		0005	0.000									
79/07/19	13 00											
79/08/06	12 00											
CP(S)-G		0005							0.130		6.0	14.0
79/08/06	13 00											
79/08/16	11 00											
CP(S)-G		0005		216	538	11	8.0	220	0.040		4.0	20.0
79/08/16	12 00											
	12 00											
CP(S)-G		0005	0.000									
79/08/16	13 00											
79/08/29	12 00											
CP(S)-G		0005							0.040		5.0	
79/08/29	13 00											
	15 45											
CP(S)-G		0005										13.0
79/08/29	16 00											
79/09/26	11 00								0.080		5.0	15.0
79/09/27	12 30		0.000									
79/10/04	08 40											
CP(S)-G		0005	0.000	222	560	13	19.0	298	0.040		5.0	13.0
79/10/04	09 40											
80/04/23	14 00											
CP(S)-G		0005		227	452	9	6.0		0.020			
80/04/23	14 10											
80/06/17	11 15											
CP(S)-G		0005							0.070	0.010		
80/06/17	11 30											
80/07/09	14 40											
CP(S)-G		0005		239	530	14	12.0	155	0.020	0.000		
80/07/09	14 50											
	14 40											
CP(S)-G		0005		239	530	14	12.0	155	0.020	0.000		
80/07/09	15 00											
80/08/05	13 30											
CP(S)-G		0005		257	594	44	18.0		0.090	0.010		
80/08/05	13 40											
80/08/13	13 10											
CP(S)-G		0005		243	538	8	5.0	190	0.030	0.000		
80/08/13	13 30											
80/09/10	13 55											
CP(S)-G		0005		242	450	7	4.0	170	0.010	0.000		
80/09/10	14 15											
	13 30											
CP(S)-G		0005		213	576	10	4.0		0.120			
80/09/10												

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LEWIS AND CLARK LAKE NEAR DAM, SD (LAT 42 52 00 LONG 97 29 30)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
77/10/26 CP(S)-6 77/10/26	09 10 10 30		0.040				0.400		0.00	370	2	30
78/02/21 CP(S)-6 78/02/21	15 30 17 30		0.140				0.600		0.01	80	1	30
78/04/21 CP(S)-6 78/04/21	08 30 09 30		0.170				0.400		0.04	580	3	50
78/05/19 CP(S)-6 78/05/19	08 00 09 30		0.010				0.500		0.02	400	2	40
78/07/06 CP(S)-6 78/07/06	14 30 15 30		0.140				0.800		0.03			
78/07/18 CP(S)-6 78/07/18	13 00 14 00		0.000				0.500		0.01			
 CP(S)-6 78/07/18	14 45 15 30		0.040				0.600		0.03			
78/08/01 CP(S)-6 78/08/01	13 00 14 00		0.130				0.500		0.04			
78/08/17 CP(S)-6 78/08/17	14 15 14 40	0005					0.200			270	3	
78/10/10 CP(S)-6 78/10/10	12 45 13 20	0005	0.190				0.300		0.00	60	2	50
 CP(S)-6 78/10/10	14 20 14 20	0005								420	2	
 CP(S)-6	13 00	0005	0.100						0.01	60	2	50
78/11/29 CP(S)-6 78/11/29	10 25 10 25	0005	0.160				0.300		0.02			
79/02/19 CP(S)-6 79/02/19	09 00 11 00	0005								230	2	
79/02/23 CP(S)-6 79/02/23	09 00 11 00	0005	0.190				0.300		0.02			
79/05/30 CP(S)-6 79/05/30	11 00 12 00	0005	0.000				0.600		0.03		2	
 CP(S)-6 79/05/30	12 00 13 00	0005								770		60
78/07/18 CP(S)-6 79/07/18	16 00 16 20	0005	0.020				0.400		0.02			
79/07/19 CP(S)-6 79/07/19	11 00 12 00	0005	0.040				0.600		0.02	710	3	100
79/08/06 CP(S)-6 79/08/06	12 00 13 00	0005	0.060				0.800		0.02			
79/08/16 CP(S)-6 79/08/16	11 00 12 00	0005	0.020				0.600		0.02	930	3	70
79/08/29 CP(S)-6 79/08/29	12 00 13 00	0005	0.030				0.700		0.02			
79/09/26	11 00		0.060				0.700		0.03			
79/10/04 CP(S)-6 79/10/04	08 40 09 40	0005	0.030				0.400		0.04	580	3	62
80/04/23 CP(S)-6 80/04/23	14 00 14 10	0005	0.080									

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LEWIS AND CLARK LAKE NEAR DAM, SD (LAT 42 52 00 LONG 97 29 30)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
80/06/17	11 15											
CP(S)-G		0005	0.000									
80/06/17	11 30											
80/07/09	14 40											
CP(S)-G		0005	0.000				0.570					
80/07/09	14 50											
	14 40											
CP(S)-G		0005	0.000				0.570					
80/07/09	15 00											
80/08/05	13 30											
CP(S)-G		0005	0.010									
80/08/05	13 40											
80/08/13	13 10											
CP(S)-G		0005	0.000				0.300			100	2	
80/08/13	13 30											
80/09/10	13 55											
CP(S)-G		0005	0.000							260	2	
80/09/10	14 15											
	13 30											
CP(S)-G		0005	0.000									
80/09/10												

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
77/10/26	09 10											
CP(S)-G			0.00		0	5	3	336	20	48		0.3
77/10/26	10 30											
78/02/21	15 30											
CP(S)-G			0.00	4	0	7	3	160	20	47		0.3
78/02/21	17 30											
78/04/21	08 30											
CP(S)-G			0.00	1	0	4	5	460	20	45		0.3
78/04/21	09 30											
78/05/19	08 00											
CP(S)-G			0.00	15	0	7	10	360	20	42		0.5
78/05/19	09 30											
78/08/17	14 15											
CP(S)-G		0005	0.00	2	0	3	0	270	10	54		0.5
78/08/17	14 40											
78/10/10	12 45											
CP(S)-G		0005	0.00	1	0	3	0	103	10	42		0.1
78/10/10	13 30											
	14 20											
CP(S)-G		0005	0.00	7	0	8	2	340	10	48		
78/10/10	14 20											
	13 00											
CP(S)-G		0005	0.00	1	0	3	0	103	10	42		0.9
78/10/10	14 30											
79/02/19	09 00											
CP(S)-G		0005	0.00	10	0	7	4	1130	70	46		
79/02/19	11 00											
	11 00											
CP(S)-G		0005										0.3
79/02/19	12 00											
79/05/30	11 00											
CP(S)-G		0005									22.0	0.8
79/05/30	12 00											
	12 00											
CP(S)-G		0005	0.00	7	0	9	0	850	27	42		

MISSOURI RIVER MAIN STEM

LEWIS AND CLARK LAKE NEAR DAM, SD (LAT 42 52 00 LONG 97 29 30)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
79/07/19 CP(S)-G 79/07/19	11 00 12 00	0005	0.00	5	0	9	2	800	10	45	27.0	0.3
79/08/16 CP(S)-G 79/08/16	11 00 12 00	0005	0.00	1	0	0	1	435	10	36	24.0	0.5
79/10/04 CP(S)-G 79/10/04	08 40 09 40	0005	0.00	6	10	6	7	620	20	43	22.0	0.4
80/04/23 CP(S)-G 80/04/23	14 00 14 10	0005									21.0	0.4
80/07/09 CP(S)-G 80/07/09	14 40 14 50	0005									24.0	0.9
CP(S)-G 80/07/09	14 40 15 00	0005									24.0	
80/08/05 CP(S)-G 80/08/05	13 30 13 40	0005									27.0	
80/08/13 CP(S)-G 80/08/13	13 10 13 30	0005	0.00	3	7	0		401	0	67	21.0	0.4
80/09/10 CP(S)-G 80/09/10	13 55 14 15	0005	0.00	0		9		266	0	47	26.0	0.2

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
77/10/26 CP(S)-G 77/10/26	09 10 10 30		0	8	2	1.0	0	25			28.0
78/02/21 CP(S)-G 78/02/21	15 30 17 30		0	7	2	1.0	0	36		64.00	27.0
78/04/21 CP(S)-G 78/04/21	08 30 09 30		0	8	1	1.0	0	33		60.00	39.0
78/05/19 CP(S)-G 78/05/19	08 00 09 30		0	10	2	0.0	0	21		60.00	29.0
78/08/17 CP(S)-G 78/08/17	14 15 14 40	0005		3	2	0.0	0	29		67.60	99.0
78/10/10 CP(S)-G 78/10/10	12 45 12 45	0005		3	1	0.0		14			
CP(S)-G 78/10/10	12 45 13 30	0005	0								5.0
CP(S)-G 78/10/10	14 20 14 20	0005		9	2	0.0		44			41.0
CP(S)-G 78/10/10	13 00 14 30	0005	0	3	1	0.0		14		67.00	5.0
79/02/19 CP(S)-G 79/02/19	09 00 11 00	0005		10	2	0.0					57.0
CP(S)-G 79/02/19	11 00 12 00	0005					0	61			
79/02/23 CP(S)-G	09 00	0005								70.00	

MISSOURI RIVER MAIN STEM

LEWIS AND CLARK LAKE NEAR DAM, SD (LAT 42 52 00 LONG 97 29 30)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
79/05/30	12 00										
CP(S)-6		0005	20	0	2	0.0	20	56			101.0
79/05/30	13 00										
79/07/19	11 00										
CP(S)-6		0005	0	9	1	1.0	20	31			205.0
79/07/19	12 00										
79/08/16	11 00										
CP(S)-6		0005	20	15	1	0.0	0	18			34.0
79/08/16	12 00										
79/10/04	08 40										
CP(S)-6		0005	0	15	1	1.0	0	36			73.0
79/10/04	09 40										
80/07/09	14 40										
CP(S)-6		0005								77.00	
80/07/09	14 50										
	14 40										
CP(S)-6		0005								77.00	
80/07/09	15 00										
80/08/13	13 10										
CP(S)-6		0005		18	2	0.0		18		85.00	122.0
80/08/13	13 30										
80/09/10	13 55										
CP(S)-6		0005		9	2	0.0		9		69.00	60.0
80/09/10	14 15										

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

POWERHOUSE OUTFLOW GAVINS PT DAM, SD (LAT 42 50 57 LONG 97 27 59)

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00916 CALCIUM CA-TOT MG/L	00440 HCO3 ION HCO3 MG/L	00910 CALCIUM CACO3 MG/L	00410 T ALK CACO3 MG/L	00940 CHLORIDE CL MG/L	00080 COLOR PT-CO UNITS	00900 TOT HARD CACO3 MG/L	00951 FLUORIDE F,TOTAL MG/L	00666 PHOS-DIS MG/L P
77/10/28	10 00	0001	0.000	57.0	200		164	11	25	236	0.64	0.000
77/11/29	13 00	0001	0.030	58.0	203		166	9	15	236	0.61	0.000
77/12/13	08 45	0001			8							
77/12/30	10 00	0001	0.020	59.0	200		164	10	15	232	0.50	0.020
78/01/31	10 00	0001	0.010	61.0	207		170	12	15	243	0.60	0.010
78/02/28	09 00	0001	0.020	60.0	205		168	10	15	240	0.70	0.010
78/04/06	18 00		0.050	56.0	181		148	10	35	210	0.30	0.040
78/04/28	09 00	0001	0.040	61.0	205		168	12	20	239	0.40	0.020
78/05/30	13 00	0001	0.040	54.0	173		142	9	15	222		0.010
78/06/21	15 00	0001	0.050	55.0	176		144	8	15	217		0.020
78/07/11	16 00	0001	0.040	55.0	168		138	10	25	211	0.50	0.030
78/08/24	14 00	0001	0.010	60.0	198		162	11	10	248	0.50	0.000
78/09/01	08 20											
CP(S)-G			0.020									
78/09/01	09 00											
78/09/25	16 00	0001	0.020		207		170	12	15	255	0.56	0.010
78/10/24	11 00		0.030	57.0	193		158	10	20	230	0.30	0.010
78/11/30	17 30		0.020	51.0	190		156	7	5	222	0.29	0.000
78/12/19	13 00	0001	0.040	54.0	193		158	9	10	224	0.28	0.000
79/01/31	12 00	0000	0.010	57.0	202		166	6	15	234	0.59	0.010
79/02/19	15 00	0000	0.020	64.0	205		168	12	10	238	0.62	0.010
79/03/21	11 00	0000	0.070	57.0	195		160	10	30	219	0.51	0.010
79/04/19	11 00		0.050	61.6			167		20	249	0.50	0.010
79/05/03	12 00											
CP(S)-G		0005	0.040	62.3			170	11	10	251	0.60	0.020
79/05/03	13 00											
79/05/14	11 00		0.010	59.0			164		10	236	0.70	0.000
79/06/25	11 00		0.020	56.0			158		2	186	0.30	0.000
79/07/17	11 00		0.000	62.0			160		15		0.40	0.000
79/08/28	11 00		0.020	56.0			164	10	5	235	0.10	0.010
79/09/27	12 30		0.000	58.0			164	12	15	236	0.50	
79/10/24	11 00		0.030	57.0			174	2	5	246	0.50	
79/12/03	11 00		0.050	64.0			183	0	15	255	0.30	2.000
79/12/18	14 00	0000	0.020	59.0			174		10	241		
80/01/31	08 45											
CP(S)-G		0005	0.010	62.0			173			252		
80/02/28	08 30	0000	0.200	59.0			170	12		241		
80/03/19	08 45		0.060				162	12		230		
80/04/23	13 30											
CP(S)-G		0005	0.030	58.0			167	10		243		
80/04/23	13 50											
80/05/23	13 30		0.030	58.0			155	12		241		
80/06/24	14 30	0000	0.030	57.0			158	11		240		
80/07/22	08 15	0000	0.020	61.0			164	10		248		
80/08/28	08 45	0000	0.020	59.0			162	10		250		
80/09/25	08 30	0000	0.020	62.0			172	10		253		

MISSOURI RIVER MAIN STEM

POWERHOUSE OUTFLOW GAVINS PT DAM, SD (LAT 42 50 57 LONG 97 27 59)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00671 PHOS-DIS ORTHO MG/L P	00945 SULFATE SO4-TOT MG/L	00515 RESIDUE DISS-105 C MG/L	00530 RESIDUE TOT NFLT MG/L	00076 TURB TRBIDMTR HACH FTU	01022 BORON B,TOT UG/L	00610 NH3+NH4- N TOTAL MG/L	00619 UN-IONZD NH3-NH3 MG/L	00680 T ORG C C MG/L	00335 COD LOWLEVEL MG/L
77/10/28	10 00	0001	0.000	190	434		5.0	120	0.040		4.0	7.0
77/11/29	13 00	0001	0.000	180	404		8.0	160	0.050		3.0	2.0
77/12/30	10 00	0001	0.010	174	440		4.6	160	0.060		3.0	8.0
78/01/31	10 00	0001	0.000	181	454		2.0	190	0.040		3.0	11.0
78/02/28	09 00	0001	0.000	179	424			200	0.080		3.0	2.0
78/04/06	18 00		0.030	148	462		11.0	180	0.140		4.0	7.0
78/04/26	09 00	0001	0.010	185	450	11	7.0	133	0.120		5.0	10.0
78/05/30	13 00	0001	0.000	167	472		11.0	80	0.020		5.0	21.0
78/06/21	15 00	0001	0.000	173	466	26	9.0	125	0.010		5.0	5.0
78/07/11	16 00	0001	0.000	177	354		15.0	197	0.030		4.0	9.0
78/08/24	14 00	0001	0.000	205	524		17.0	170	0.030		4.0	16.0
78/09/01	08 20											
CP(S)-G									0.090		6.0	
78/09/01	09 00											
78/09/25	16 00	0001	0.000		560	11		133	0.010		5.0	9.0
78/10/24	11 00		0.000	163	502	16		145	0.020		4.0	7.0
78/11/30	17 30			183	506	11	8.0	182	0.050		4.0	8.0
78/12/19	13 00	0001	0.000	170	496	2	2.0	166	0.040		4.0	20.0
79/01/31	12 00	0000	0.000	200	548	13	1.3	207	0.100			7.0
79/02/19	15 00	0000	0.000		490	194	1.6	190	0.030		4.0	10.0
79/03/21	11 00	0000	0.010	162	450	50	28.0	160	0.070		4.0	8.0
79/04/19	11 00		0.000	134	492	8	8.4	190	0.030		4.0	8.0
79/05/03	12 00											
CP(S)-G		0005	0.000	163	516	7	6.0	140	0.020		4.0	12.0
79/05/03	13 00											
79/05/14	11 00		0.000	166	494	4	5.0	148	0.010		10.0	8.0
79/06/25	11 00		0.000	204	426	18	10.0	159	0.000		4.0	11.0
79/07/17	11 00		0.000	227	242	27	15.0	175	0.040		3.0	8.0
79/08/28	11 00		0.000	216	520	6	6.0	200	0.020		4.0	8.0
79/09/27	12 30			226	482	6	7.0	0.1	0.040		4.0	
79/10/24	11 00			207	544	20	2.0	210	1.000		6.0	4.0
79/12/03	11 00		0.000	207	536	74	31.0	210	0.010		4.0	10.0
79/12/18	14 00	0000		211	538	3	3.0	210	0.000		4.0	10.0
80/01/31	08 45											
CP(S)-G		0005		235	530		1.0		0.010			
80/02/28	08 30	0000		206	442	4	2.0		0.020			
80/03/19	08 45			196	456	19	13.0		0.010			
80/04/23	13 30											
CP(S)-G		0005		165		11	7.0	153	0.000			
80/04/23	13 50											
80/05/23	13 30			244	486	8	4.0	546	0.030	0.000		
80/06/24	14 30	0000		215	536	9	5.0		0.010	0.000		
80/07/22	08 15	0000		233	586	17	8.0	84	0.020	0.000		
80/08/28	08 45	0000		240	534	10	4.0	290	0.000	0.000		
80/09/25	08 30	0000		238	586	9	7.0		0.000	0.000		

MISSOURI RIVER MAIN STEM

POWERHOUSE OUTFLOW GAVINS PT DAM, SD (LAT 42 50 57 LONG 97 27 59)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	00620 NO3-N TOTAL MG/L	00618 NO3-N DISS MG/L	00613 NO2-N DISS MG/L	00615 NO2-N TOTAL MG/L	00625 TOT KJEL N MG/L	00655 POLY PO4 PO4 MG/L	00678 PHOS-TOT HYD+ORTH MG/L P	01105 ALUMINUM AL,TOT UG/L	01002 ARSENIC AS,TOT UG/L	01007 BARIUM BA,TOT UG/L
77/10/28	10 00	0001	0.050				0.300		0.00	390	2	30
77/11/29	13 00	0001	0.090			0.000	0.350		0.02	600	3	40
77/12/30	10 00	0001	0.180			0.000	0.330		0.02	220	3	90
78/01/31	10 00	0001	0.090			0.000	0.200		0.01	200	1	40
78/02/28	09 00	0001	0.120			0.000	0.300		0.02	90	1	30
78/04/06	18 00		0.190			0.000	0.300		0.05	1430	2	50
78/04/28	09 00	0001	0.160			0.000	0.300		0.03	450	2	30
78/05/30	13 00	0001	0.090			0.000	0.500		0.01	600	2	40
78/06/21	15 00	0001	0.110			0.000	0.400		0.02	1220	2	50
78/07/11	16 00	0001	0.130			0.000	0.400		0.04	1210	2	40
78/08/24	11 00									270	3	50
	14 00	0001	0.040			0.000	0.200		0.01			
78/09/01	08 20											
CP(S)-6			0.130				0.800		0.02			
78/09/01	09 00											
78/09/25	16 00	0001	0.100			0.000	0.400		0.02			
78/10/24	11 00		0.220			0.000	0.200		0.02			
	13 00	0001								800	2	51
78/11/30	17 30		0.200			0.000	0.400		0.02	250		50
78/12/19	11 00									150	1	51
	13 00	0001	0.220			0.000	0.300		0.01			
79/01/31	12 00	0000	0.240			0.000	0.200		0.00	50	1	50
79/02/19	15 00	0000	0.240			0.000	0.250		0.01	90	2	50
79/03/21	11 00	0000	0.270			0.000	0.400		0.07	1300	3	70
79/04/19	11 00		0.230			0.000	0.400		0.02	530	2	50
79/05/03	12 00											
CP(S)-6		0005	0.070				0.400		0.02	300	1	50
79/05/03	13 00											
79/05/14	11 00		0.030	0.02		0.000	0.400		0.01	240	2	40
79/06/25	11 00		0.050	0.00		0.000	0.300		0.01	630	2	120
79/07/17	11 00		9.000			0.000	0.400		0.03	950	2	80
79/08/28	11 00		0.050	0.00		0.000	0.400		0.01	410	2	60
79/09/27	12 30		0.100				0.300		0.03	520	2	60
79/10/24	11 00		6.000			0.000	0.300		0.03	440	3	72
79/12/03	11 00		0.110	11.00		0.000	0.300		0.03	740	2	76
79/12/18	14 00	0000	0.140				0.300		0.02	420	2	72
80/01/31	08 45											
CP(S)-6		0005	0.130				0.200				2	
80/01/31	09 00											
80/02/28	08 30	0000	0.200				0.020					
80/03/19	08 45		0.150				0.400					
80/04/23	13 30											
CP(S)-6		0005	0.050				0.300			160	2	
80/04/23	13 50											
80/05/23	13 30		0.030				0.300			345	1	
80/06/24	14 30	0000	0.000				0.400					
80/07/22	08 15	0000	0.000				0.100					
80/08/28	08 45	0000	0.000				0.030			480	3	
80/09/25	08 30	0000	0.000				0.300					

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

POWERHOUSE OUTFLOW GAVINS PT DAM, SD (LAT 42 50 57 LONG 97 27 59)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01012 BERYLIUM BE,TOT UG/L	01027 CADMIUM CD,TOT UG/L	01034 CHROMIUM CR,TOT UG/L	01042 COPPER CU,TOT UG/L	01037 COBALT CO,TOTAL UG/L	01045 IRON FE,TOT UG/L	01051 LEAD PB,TOT UG/L	01132 LITHIUM LI,TOT UG/L	00927 MGNSIUM MG,TOT MG/L	71900 MERCURY HG,TOTAL UG/L
77/10/28	10 00	0001	0.00	1	10	2	4	347	30	44		0.0
77/11/29	13 00	0001	0.00	3	0	4	9	530	30	42	22.0	0.0
77/12/30	10 00	0001	0.00	3	10	3	9	300	60	42	21.0	0.0
78/01/31	10 00	0001	0.00	2	10	8	4	280	80	48	22.0	0.0
78/02/28	09 00	0001	0.00	1	0	5	4	120	30	45	22.0	0.1
78/04/06	18 00		0.00	1	0	37	5	780	30	38	17.0	0.0
78/04/28	09 00	0001	0.00	1	0	3	3	400	30	40	21.0	0.0
78/05/30	13 00	0001	0.00	1	0	2	0	460	20	41	21.0	0.0
78/06/21	15 00	0001	0.00	5	0	6	2	890	140	46	20.0	0.1
78/07/11	16 00	0001	0.00	1	10	6	3	1000	30	43	18.0	0.1
78/08/24	11 00		0.00	8	0	2	2	240	100	49	24.0	
	14 00	0001										0.0
78/10/24	13 00	0001	0.00	5	0	3	0	540	60	39	22.0	1.0
78/11/30	17 30		0.00	10	0	14	0	230	9	39	191.0	0.0
78/12/19	11 00		0.00	3	0	3	0	130	30	38	22.0	0.0
79/01/31	12 00	0000	0.00	5	0	3	0	70	60	41	22.0	1.0
79/02/19	15 00	0000	0.00	15	0	4	6	380	50	47	19.3	0.2
79/03/21	11 00	0000	0.00	1	0	5	2	1250	30	43	18.6	0.0
79/04/19	11 00		0.00	5	0	5	5	430	110	48	23.1	0.1
79/05/03	12 00											
CP(S)-G		0005	0.00	1	0	6	4	310	30	46	23.3	0.6
79/05/03	13 00											
79/05/14	11 00		0.00	7	0	3	2	300	75	46	22.0	0.2
79/06/25	11 00		1.00	2	6	3	10	560	204	48	11.0	0.0
79/07/17	11 00		1.00	0	0	12	4	800	10	50	22.0	0.0
79/08/28	11 00		0.00	1	0	0	3	224	10	33	23.0	0.0
79/09/27	12 30		0.00	0	0	1	1	282	10	34	22.0	0.0
79/10/24	11 00		0.00	1	12	5	10	458	13	40	25.0	0.0
79/12/03	11 00		0.00	2	10	3	9	600	13	39	23.0	0.0
79/12/18	14 00	0000	0.00	1	10	3	7	214	20	43	23.0	0.0
80/01/31	08 45											
CP(S)-G		0005		1	11			113		39	23.0	0.0
80/01/31	09 00											
80/02/28	08 30	0000									20.0	0.2
80/03/19	08 45										18.0	0.0
80/04/23	13 30											
CP(S)-G		0005	1.00	0	0	13		196	10	43	21.0	0.2
80/05/23	13 30		0.00	0	0	0		110	0	42	20.0	0.0
80/06/24	14 30	0000									24.0	0.0
80/07/22	08 15	0000									23.0	0.0
80/08/28	08 45	0000	0.00	0	0	3		304	0	46	25.0	0.0
80/09/25	08 30	0000									24.0	0.0

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

POWERHOUSE OUTFLOW GAVINS PT DAM, SD (LAT 42 50 57 LONG 97 27 59)--Continued

DATE FROM TO	TIME OF DAY	DEPTH FEET	01062 MOLY MO,TOT UG/L	01067 NICKEL NI,TOTAL UG/L	01147 SELENIUM SE,TOT UG/L	01077 SILVER AG,TOT UG/L	01087 VANADIUM V,TOT UG/L	01092 ZINC ZN,TOT UG/L	00937 PTSSIUM K,TOT MG/L	00929 SODIUM NA,TOT MG/L	01055 MANGNESE MN UG/L
77/10/28	10 00	0001	0	13	1	1.0	0	5	3.00	64.00	25.0
77/11/29	13 00	0001	0	19	2	1.0	0	8	2.00	64.00	29.0
77/12/30	10 00	0001	0	14	2	0.0	0	8	2.00	60.00	32.0
78/01/31	10 00	0001	0	10	1	1.0	0	31	5.00	72.00	28.0
78/02/28	09 00	0001	0	10	1	1.0	0	18	5.00	64.00	29.0
78/04/06	18 00		0	9	1	1.0	0	14	6.00	48.00	78.0
78/04/28	09 00	0001	0	9	1	1.0		38	6.00	60.00	28.0
78/05/30	13 00	0001	0	10	2	1.0		6	6.00	64.00	41.0
78/06/21	15 00	0001	0	8	2	1.0		9	6.00	60.00	71.0
78/07/11	16 00	0001	0	10	1	1.0	0	10	6.00	56.00	108.0
78/08/24	11 00			3	2	0.0	0	4			30.0
	14 00	0001							5.30	73.00	
78/09/25	16 00	0001							5.00	72.00	
78/10/24	11 00								5.30	128.00	
	13 00	0001		11	1	0.0	0	9			43.0
78/11/30	17 30			13	2	0.0	0	9	5.60	80.00	23.0
78/12/19	11 00			10	1	0.0		8			28.0
	13 00	0001							5.50		
79/01/31	12 00	0000		11	0	1.0	0	7		114.00	44.0
79/02/19	15 00	0000		10			0	6	5.70	72.00	29.0
79/03/21	11 00	0000		10	2	0.0	0	10	5.60	60.00	100.0
79/04/19	11 00		0	0	1	0.0	0	8	6.00	72.00	31.0
79/05/03	12 00										
CP(S)-6		0005	0	0			0	28			33.0
79/05/03	13 00										
79/05/14	11 00		0	10	2	0.0	0	3	5.00	72.00	23.0
79/06/25	11 00		20	9	0	1.0	20	7	5.00	88.00	44.0
79/07/17	11 00		40	10	1	1.0	20	15	5.00	72.00	98.0
79/08/28	11 00		0	14	1	0.0	0	5	5.00	74.00	16.0
79/09/27	12 30		0	12	2	0.0	0	5			14.0
79/10/24	11 00		0	9	1	1.0	0	6	5.00	72.00	41.0
79/12/03	11 00		0	12	2	1.0	2	7	4.00	104.00	42.0
79/12/16	14 00	0000	0	7	2	0.0	2	1	4.00	120.00	22.0
80/01/31	06 45										
CP(S)-6		0005			1						
80/04/23	13 30										
CP(S)-6		0005			1	1.0		11		68.00	24.0
80/04/23	13 50										
80/05/23	13 30				1	0.0		7		66.00	27.0
80/07/22	08 15	0000								146.00	
80/08/28	08 45	0000		0	2	0.0		3		72.00	51.0

BEADLE COUNTY

442112098174001.
LOCATION.--Lat 44°21'12", long 98°17'40", in SW¼SW¼SW¼NW¼ sec.9, T.110 N., R.62 W., Hydrologic Unit 10160006, at southwest corner of city well field, 3.5 mi (5.6 km) west of Huron.
Owner: City of Huron.
AQUIFER.--Glacial Outwash.
WELL CHARACTERISTICS.--Drilled unused public supply artesian well, diameter 12 in (0.305 m), depth 74 ft (22.6 m), perforated 38 to 74 ft (11.6 to 22.6 m).
DATUM.--Datum of gage is 1,306.93 ft (398.352 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of platform 2.00 ft (0.610 m) above land-surface datum.
PERIOD OF RECORD.--February 1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 10.81 ft (3.295 m) below land-surface datum, Feb. 5, 1954, lowest, 45.10 ft (13.746 m) below land-surface datum, Aug. 15, 1980.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	39.17	37.72	36.12	34.99	33.94	33.04	32.09	36.28	39.67	40.45	44.77	43.05
10	38.67	37.40	35.97	34.55	33.77	32.61	32.03	36.30	38.85	39.46	44.93	43.03
15	38.33	37.22	35.86	34.50	33.74	32.63	31.87	37.28	38.56	39.65	45.10	42.30
20	37.94	37.02	35.60	34.78	33.26	32.48	31.87	38.06	38.31	41.87	44.32	41.66
25	37.99	36.57	35.44	34.20	---	32.43	32.67	39.79	38.81	43.43	43.38	41.21
EOM	37.49	36.62	35.25	34.39	---	32.29	34.46	40.60	38.95	44.30	42.88	40.70
MAX	39.66	37.80	36.65	35.14	34.32	33.04	34.46	40.60	40.56	44.30	45.10	43.07
MIN	37.49	36.45	35.25	34.11	33.21	32.29	31.73	34.94	38.06	39.18	42.88	40.70

WTR YR 1980 HIGH 31.73 APR 21 LOW 45.10 AUG 15

BON HOMME COUNTY

425643097571001.
LOCATION.--Lat 42°56'43", long 97°57'10", in SW¼SW¼SW¼NW¼ sec.21, T.94 N., R.60 W., Hydrologic Unit 10170101, 7 mi (11 km) southwest of Tyndall.
Owner: U.S. Geological Survey.
AQUIFER.--Glacial Outwash.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 3 in (0.08 m), depth 64 ft (19.5 m), sandpoint 56 to 64 ft (17.1 to 19.5 m).
DATUM.--Datum of gage is 1,334.52 ft (406.762 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder platform 2.50 ft (0.762 m) above land-surface datum.
PERIOD OF RECORD.--1966-68, 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 18.66 ft (5.688 m) below land-surface datum, June 10, 1972; lowest, 27.94 ft (8.496 m) below land-surface datum, Sept. 30, 1980.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	25.42	25.80	26.02	26.34	---	26.36	26.17	25.79	26.15	26.60	27.23	27.70
10	25.47	25.85	26.07	26.25	26.57	26.42	25.36	25.86	26.24	26.69	27.33	27.76
15	25.54	25.90	26.14	26.40	26.64	26.35	25.41	25.94	26.20	26.79	27.41	27.80
20	25.58	25.95	26.18	26.48	26.58	26.14	25.59	26.00	26.36	26.92	27.47	27.84
25	25.70	25.97	26.24	26.47	26.64	25.95	25.69	26.01	26.40	27.03	27.58	27.91
EOM	25.70	26.04	26.30	---	26.46	26.15	25.74	26.11	26.46	27.14	27.65	27.94
MAX	25.73	26.05	26.30	26.55	26.67	26.48	26.22	26.11	26.48	27.14	27.65	27.94
MIN	25.40	25.75	26.01	26.25	26.44	25.91	25.28	25.75	26.11	26.50	27.16	27.66

WTR YR 1980 HIGH 25.28 APR 11 LOW 27.94 SEP 30

BROWN COUNTY

453312098244401.
LOCATION.--Lat 45°33'12", long 98°24'44", in NW¼NW¼NW¼SW¼ sec.15, T.124 N., R.63 W., Hydrologic Unit 10160004, 1.5 mi (2.4 km) south of Ordway.
Owner: Water and Power Resources Service.
AQUIFER.--Elm.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 4 in (0.10 m), depth 38 ft (11.6 m), perforated 6 to 38 ft (1.8 to 11.6 m).
DATUM.--Datum of gage is 1,304.14 ft (397.502 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder platform 3.10 ft (0.945 m) above land-surface datum.
PERIOD OF RECORD.--August 1955 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.35 ft (0.107 m) below land-surface datum, Apr. 15, 1969, lowest, 10.87 ft (3.313 m) below land-surface datum, Mar. 15, 1978.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	8.96	8.73	8.51	8.43		---	8.11	8.16	7.94	8.38	8.96	8.78
10	8.99	8.65	8.46	---		---	8.07	8.22	7.81	8.50	8.99	8.92
15	9.00	8.62	8.48	---		8.51	8.03	8.30	7.88	8.66	9.01	8.96
20	8.93	8.63	8.46	---		8.39	8.04	8.32	7.98	8.78	8.92	9.05
25	8.91	8.58	8.46	---		8.30	8.05	8.43	8.13	8.83	8.72	9.13
EOM	8.74	8.57	8.45	---		8.17	8.05	8.37	8.22	8.88	8.69	9.13
MAX	9.04	8.74	8.57	8.45		8.51	8.16	8.48	8.28	8.88	9.01	9.15
MIN	8.74	8.57	8.45	8.40		8.17	8.02	8.07	7.80	8.27	8.68	8.69

WTR YR 1980 HIGH 7.80 JUN 12 LOW 9.15 SEP 27

LINCOLN COUNTY

431619096460202.
LOCATION.--Lat 43°16'19", long 96°46'02", in NE¼NE¼NE¼NE¼ sec.32, T.98 N., R.50 W., Hydrologic Unit 10170102, 4 mi (6 km) south of Worthing.
Owner: South Dakota Department of Water and Natural Resources.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in (0.15 m), depth 383 ft (116.7 m), screened 363 to 383 ft (110.6 to 116.7 m).
DATUM.--Datum of gage is 1,320 ft (402.3 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder platform 3.0 ft (0.91 m) above land-surface datum.
PERIOD OF RECORD.--August 1979 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 150.70 ft (45.933 m) below land-surface datum, Oct. 31, 1979, lowest, 151.95 ft (46.314 m) below land-surface datum, Nov. 25, 1980.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 1200

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05	150.95	NOV 20	151.00	FEB 20	150.90	APR 20	150.90	JUN 10	151.10	AUG 15	151.50
10	150.95	25	150.70	25	151.20	25	150.95	JUL 03	151.22	SEP 03	151.47
19	150.85	30	150.85	MAR 05	151.05	30	150.95	05	151.20	05	151.65
20	150.85	DEC 05	150.70	10	151.00	MAY 05	151.00	10	151.25	10	151.60
25	151.15	10	151.15	15	150.90	10	150.85	15	151.25	15	151.55
31	150.70	15	150.85	20	150.95	15	151.10	20	151.35	20	151.55
NOV 05	150.95	JAN 03	151.02	26	150.64	20	151.05	25	151.40	25	151.80
10	150.90	FEB 06	151.01	APR 05	151.00	25	151.00	31	151.35		
13	150.99	10	151.00	10	150.95	31	151.05	AUG 05	151.50		
15	150.90	15	151.10	15	150.95	JUN 05	150.95	10	151.45		

WTR YR 1980 HIGH 150.64 MAR 26 LOW 151.20 FEB 25

MARSHALL COUNTY

454745097450401.
LOCATION.--Lat 45°47'45", long 97°45'04", in SE¼NE¼SE¼ sec.23, T.127 N., R.58 W., Hydrologic Unit 09020105, within city limits of Britton.
Owner: City of Britton.
AQUIFER.--Dakota Sandstone.
WELL CHARACTERISTICS.--Drilled unused public supply artesian well, diameter 8 in (0.20 m), depth 1,060 ft (323.1 m).
DATUM.--Datum of gage is 1,360 ft (414.5 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder platform 2.50 ft (0.760 m) above land-surface datum.
PERIOD OF RECORD.--July 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 37.18 ft (11.306 m) below land-surface datum, lowest, 59.92 ft (18.221 m) below land-surface datum.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	42.64	42.81	42.55	42.84		---	42.70	43.26	42.93	43.32	43.77	43.47
10	42.49	42.54	42.44	---		---	42.67	43.13	43.15	43.58	43.60	43.66
15	42.72	42.62	42.75	---		42.57	42.60	43.36	43.20	43.91	43.49	43.27
20	42.52	42.78	43.05	---		42.71	42.84	43.42	43.19	43.79	43.15	43.27
25	42.81	42.54	42.65	---		42.79	43.03	43.58	43.32	44.09	43.39	43.42
EOM	42.41	42.76	42.87	---		42.78	43.13	43.21	43.10	44.10	43.35	43.29
MAX	42.89	42.88	43.08	43.02		42.81	43.13	43.58	43.37	44.10	44.08	43.78
MIN	42.41	42.39	42.34	42.58		42.56	42.54	43.13	42.93	43.26	43.15	43.17

WTR YR 1980 HIGH 42.34 DEC 6 LOW 44.10 JUL 26 AND OTHERS

MINNEHAHA COUNTY

433536096441301.
LOCATION.--Lat 43°35'36", long 96°44'13", in NW¼SE¼ sec.32, T.102 N., R.49 W., Hydrologic Unit 10170203, at Foss Field in Sioux Falls.
Owner: City of Sioux Falls.
AQUIFER.--Big Sioux.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 4 in (0.10 m), depth 43 ft (13.1 m).
DATUM.--Datum of gage is 1,425.24 ft (434.404 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing 1.20 ft (0.365 m) above land-surface datum.
PERIOD OF RECORD.--September 1965 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 11.69 ft (3.563 m) below land-surface datum, May 2, 1969, lowest, 26.09 ft (7.952 m) below land-surface datum, Feb. 22, 1977.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	15.45	15.94	16.14	16.24	15.98	16.24		---		16.41	16.69	17.12
10	15.62	15.97	16.10	16.11	15.93	16.28		---		16.25	16.83	---
15	15.78	16.02	16.14	16.18	16.17	16.36		16.59		16.20	16.93	---
20	15.77	16.11	16.13	16.18	16.26	16.56		16.57		16.36	16.98	---
25	15.90	16.08	16.16	16.12	16.32	16.59		16.62		16.43	---	---
EOM	15.83	16.15	16.18	16.11	16.28	---		---		16.55	---	---
MAX	15.91	16.18	16.27	16.29	16.32	16.60		16.74		16.55	17.04	17.21
MIN	15.34	15.88	16.10	16.01	15.93	16.11		16.53		16.18	16.57	17.07

WTR YR 1980 HIGH 15.34 OCT 1 AND OTHERS LOW 17.21 SEP 8

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENT- I- FIER	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH FIELD (UNITS) (00400)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	TEMPER- ATURE, WATER (DEG C) (00010)
			AURORA						
434409098354001	103N65W11CDAC	79-06-30	1030	211NBRR	253	3300	7.7	20	11.5
434306098350401	103N65W23AAAB	79-07-31	1549	211DKOT	760	2600	8.0	.5	11.3
			CHARLES MIX						
425356098170402	93N63W 3CBDD2	79-09-04	1300	211CDLL	--	2175	8.3	4.5	15.0
			CUSTER						
434832103150501	3S 7E11ABAD	79-08-02	--	217LKOT	476	666	7.3	19	13.6
			DAVISON						
434555098051201	104N61W36DDAA	79-07-26	0800	211DKOT	340	2330	7.2	18	17.0
			FALL RIVER						
432653103580501	7S 1E14BAAC	79-07-02	--	221SNDC	780	2350	6.4	96	13.5
432834103203301	7S 6E 1AAAD	79-08-30	--	217FLRV	607	1230	6.6	59	19.1
432813103210601	7S 6E 18AAB	79-08-30	--	217FLRV	355	740	7.2	42	16.2
432549103215701	7S 6E23AACC	79-08-31	--	217FLRV	800	2120	7.4	18	17.8
432214103234301	7S 6E34CACA	79-08-31	--	217FLRV	480	911	7.4	16	16.1
432113103224801	8S 6E14CBBA	79-08-29	--	217INKR	1996	1670	7.1	33	28.0
431632103511501	9S 2E11CCDC	79-08-31	--	217INKR	835	2180	8.5	2.3	22.9
431242103451001	10S 3E15BA	79-08-30	--	217FLRV	1236	4350	9.1	.5	25.8
430416103524101	11S 2E21DC	79-08-30	--	217LKOT	2400	2220	8.6	2.0	44.8
			HAAKON						
440253101180801	1N23E13BCAD	79-08-16	--	217NCSL	2024	3240	7.5	67	39.2
435957101214001	1N23E33CACC	79-08-17	--	217FLRV	2430	--	6.9	148	43.3
442910101203801	6N23E16AB	79-08-15	--	217FLRV	2720	3930	8.2	9.1	40.5
			HUTCHINSON						
431727097345401	98N57W21DAB	79-09-05	1300	211NBRR	--	2275	7.3	44	10.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)
AURORA											
434409098354001	79-08-30	--	84	0	21	7.6	750	94	36	11	620
434306098350401	79-07-31	--	1200	1100	330	79	110	17	1.4	21	34
CHARLES MIX											
425356098170402	79-09-04	.6	58	0	15	4.9	390	92	22	13	565
CUSTER											
434832103150501	79-08-02	--	310	99	81	27	8.5	6	.2	3.2	262
DAVISON											
434555098051201	79-07-26	--	0	0	380	92	130	17	1.6	27	179
FALL RIVER											
432653103580501	79-07-02	.0	250	100	56	26	430	79	12	5.7	182
432834103203301	79-08-30	--	640	450	190	39	27	8	.5	6.0	234
432813103210601	79-08-30	--	350	16	80	37	19	10	.4	8.4	412
432549103215701	79-08-31	--	1200	990	360	76	39	6	.5	12	284
432214103234301	79-08-31	--	370	140	100	30	42	19	.9	5.6	290
432113103224801	79-08-29	--	890	670	270	51	47	10	.7	9.9	270
431632103511501	79-08-31	--	13	0	4.2	.5	500	99	61	1.4	437
431242103451001	79-08-30	--	52	0	14	4.0	1000	97	61	3.7	336
430416103524101	79-08-30	--	47	0	15	2.1	450	95	29	2.9	448
HAAKON											
440253101180801	79-08-16	--	17	0	3.9	1.6	800	99	86	5.6	1388
435957101214001	79-08-17	--	96	0	31	4.2	1500	97	67	13	904
442910101203801	79-08-15	.0	26	0	7.9	1.3	800	98	70	6.6	1008
HUTCHINSON											
431727097345401	79-09-05	.7	710	260	240	25	180	35	3.0	31	545

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	BROMIDE DISSOLVED (MG/L AS BR) (71870)	IODIDE, DISSOLVED (MG/L AS I) (71865)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)
					AURORA						
434409098354001	79-08-30	0	620	590	380	1.8	--	--	11	--	2080
434306098350401	79-07-31	0	28	1200	120	2.3	--	--	1.9	--	1880
					CHARLES MIX						
425356098170402	79-09-04	0	460	11	400	1.6	3.2	.36	8.1	1130	1130
					CUSTER						
434632103150501	79-08-02	0	210	160	2.0	.3	.0	.00	17	450	429
					DAVISON						
434555098051201	79-07-26	0	147	1300	110	2.1	.4	.01	9.0	2250	2150
					FALL RIVER						
432653103580501	79-07-02	0	150	1000	21	.4	.2	.05	8.6	1710	1640
432834103203301	79-08-30	--	192	530	14	.6	.1	.00	14	944	939
432813103210601	79-08-30	--	338	110	4.9	.8	.1	.00	9.7	385	474
432549103215701	79-08-31	--	233	1100	1.6	.4	.0	.01	9.8	1840	1780
432214103234301	79-08-31	--	238	260	15	.7	.1	.01	8.9	596	611
432113103224801	79-08-29	0	221	760	19	.6	.1	.01	13	1360	1310
431632103511501	79-08-31	7	372	630	140	.8	.7	.26	9.1	1130	1510
431242103451001	79-08-30	37	340	2000	63	.9	.3	.07	10	3170	3300
430416103524101	79-08-30	19	400	790	26	.9	.2	.02	21	1430	1550
					HAAKON						
440253101180801	79-08-16	0	1140	12	420	3.3	3.9	1.7	21	2000	1960
435957101214001	79-08-17	0	740	2300	290	3.5	1.7	.37	26	4590	4620
442910101203801	79-08-15	0	830	860	170	3.6	1.4	.22	23	2680	2370
					HUTCHINSON						
431727097345401	79-09-05	0	450	800	14	.8	.2	.05	15	1640	1590

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)
AURORA											
434409098354001	79-08-30	2.42	--	--	--	.01	--	--	--	.020	.040
434306098350401	79-07-31	2.56	--	--	--	.00	--	--	--	--	.000
CHARLES MIX											
425356098170402	79-09-04	1.54	.00	.000	.00	--	2.500	2.3	2.3	.020	--
CUSTER											
434832103150501	79-08-02	.61	.30	.020	.32	--	.000	.00	.32	.000	--
DAVISON											
434555098051201	79-07-26	.12	--	--	--	--	--	2.4	--	.010	--
FALL RIVER											
432653103580501	79-07-02	2.33	.03	.020	.05	--	.470	.26	.31	.010	--
432834103203301	79-08-30	1.28	.64	.020	.66	--	.050	.38	1.0	.000	--
432813103210601	79-08-30	.52	.14	.000	.14	--	.010	2.7	2.8	.010	--
432549103215701	79-08-31	2.50	.03	.000	.03	--	.290	1.1	1.1	.010	--
432214103234301	79-08-31	.81	.00	.020	.02	--	.150	.51	.53	.000	--
432113103224801	79-08-29	1.85	.00	.000	.00	--	.170	.48	.48	.000	--
431632103511501	79-08-31	1.54	.04	.230	.27	--	.990	1.4	1.7	.030	--
431242103451001	79-08-30	4.31	.03	.000	.03	--	2.000	2.1	2.1	.020	--
430416103524101	79-08-30	1.94	.00	.020	.01	--	1.000	1.3	1.3	.000	--
HAAKON											
440253101180801	79-08-16	2.72	.00	.020	.01	--	2.100	2.0	2.0	.000	--
435957101214001	79-08-17	6.24	.01	.000	.01	--	--	3.0	3.0	.000	--
442910101203801	79-08-15	3.64	.00	.000	.00	--	2.400	2.1	2.1	--	--
HUTCHINSON											
431727097345401	79-09-05	2.23	.00	.000	.00	--	2.500	2.2	2.2	.010	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CYANIDE TOTAL (MG/L AS CN) (00720)	SULFIDE TOTAL (MG/L AS S) (00745)
		AURORA			
434409098354001	79-08-30	--	--	--	--
434306098350401	79-07-31	--	--	--	--
		CHARLES MIX			
425356098170402	79-09-04	--	1.0	--	.2
		CUSTER			
434832103150501	79-08-02	--	.7	--	.8
		DAVISON			
434555098051201	79-07-26	--	1.0	--	.2
		FALL RIVER			
432653103580501	79-07-02	--	2.4	--	.1
432834103203301	79-08-30	--	.4	--	.2
432813103210601	79-08-30	--	20	--	9.6
432549103215701	79-08-31	--	4.2	--	7.1
432214103234301	79-08-31	11	--	--	.2
432113103224801	79-08-29	8.1	--	--	.3
431632103511501	79-08-31	--	14	--	.2
431242103451001	79-08-30	22	--	--	1.0
430416103524101	79-08-30	1.2	--	--	11
		HAAKON			
440253101180801	79-08-16	--	1.5	--	.2
435957101214001	79-08-17	--	2.1	--	.9
442910101203601	79-08-15	--	2.1	--	9.4
		HUTCHINSON			
431727097345401	79-09-05	--	1.6	--	.2

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENT- I- FIER	DATE OF SAMPLE	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)
			AURORA						
434409098354001	105N65W11CDAC	79-08-30	--	--	--	5100	--	--	--
434306098350401	105N65W23AAAB	79-07-31	--	--	--	350	--	--	--
			CHARLES MIX						
425356098170402	93N63W 3CBDD2	79-09-08	0	1	0	4700	0	10	--
			CUSTER						
434832103150501	3S 7E11ABAD	79-06-02	0	3	50	30	<1	0	--
			DAVISON						
434555098051201	104N61W36DDAA	79-07-26	0	0	0	510	0	0	--
			FALL RIVER						
432653103560501	7S 1E14BAAC	79-07-02	100	0	0	500	0	0	--
432834103203301	7S 6E 1AAAD	79-08-30	0	0	20	80	<1	0	--
432813103210601	7S 6E 18AAB	79-08-30	0	1	0	60	0	10	--
432549103215701	7S 6E23AACC	79-08-31	0	1	0	80	0	20	--
432214103234301	7S 6E34CACA	79-08-31	0	1	20	70	<1	0	--
432113103224801	8S 6E14CBBA	79-08-29	0	3	20	70	<1	0	--
431632103511501	9S 2E11CCDC	79-08-31	20	1	0	140	0	0	--
431242103451001	10S 3E15BA	79-08-30	0	0	0	370	0	0	--
430416103524101	11S 2E21DC	79-08-30	0	0	0	160	0	0	--
			HAAKON						
440253101180801	1N23E13BCAD	79-08-16	10	1	200	3400	0	10	--
435957101214001	1N23E33CACC	79-08-17	20	0	0	60	0	10	--
442910101203801	6N23E16AB	79-08-15	20	0	0	2000	0	0	--
			HUTCHINSON						
431727097345401	98N57W21DAB	79-09-05	0	1	0	3400	0	10	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
					AURORA						
434409096354001	79-08-30	--	--	--	90	--	--	20	--	--	--
434306096350401	79-07-31	--	--	--	2700	--	--	130	--	--	--
					CHARLES MIX						
425356098170402	79-09-04	0	--	--	510	0	140	0	.0	--	0
					CUSTER						
434832103150501	79-08-02	2	--	--	100	0	20	4	.0	--	<10
					DAVISON						
434555098051201	79-07-26	0	--	2000	1900	1	160	110	.2	--	0
					FALL RIVER						
432653103560501	79-07-02	0	--	--	910	0	180	30	.1	--	5
432834103203301	79-08-30	1	--	--	100	0	60	20	.0	--	<10
432813103210601	79-04-30	2	--	--	40	0	50	20	.0	--	3
432549103215701	79-08-31	1	--	--	28000	0	50	240	.3	--	14
432214103234301	79-08-31	21	--	--	3400	0	60	100	.0	--	<10
432113103224801	79-08-29	1	--	--	3000	0	90	120	.2	--	<10
431632103511501	79-08-31	1	--	--	0	0	--	0	.0	--	0
431242103451001	79-08-30	2	--	--	130	0	170	0	.0	--	2
430416103524101	79-08-30	1	--	--	10	0	150	10	.2	--	0
					HAAKON						
440253101160801	79-08-16	5	--	--	60	0	210	20	1.2	--	0
435957101214001	79-08-17	10	--	--	2600	0	5	40	.0	--	0
442910101203801	79-08-15	1	--	--	10	0	290	40	.0	--	0
					HUTCHINSON						
431727097345401	79-09-05	0	--	--	2200	2	290	40	.0	--	0

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) (01516)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)
AURORA											
434409098354001	79-08-30	--	--	--	--	--	--	<29	<.3	<14	<.4
434306098350401	79-07-31	--	--	--	--	--	--	--	--	--	--
CHARLES MIX											
425356098170402	79-09-04	--	0	--	520	6.0	10	<12	<.3	17	<.4
CUSTER											
434832103150501	79-08-02	--	3	--	760	2.0	50	9.5	<.3	4.3	.5
DAVISON											
434555098051201	79-07-26	--	1	--	6700	1.0	20	<24	<.3	26	<.4
FALL RIVER											
432653103580501	79-07-02	--	0	--	2200	.0	40	--	--	--	--
432834103203301	79-08-30	--	7	--	2500	1.0	30	27	<.3	11	<.4
432613103210601	79-08-30	--	12	--	1200	2.0	30	26	1200	17	780
432549103215701	79-08-31	--	0	--	13000	1.0	20	46	46	41	14
432214103234301	79-08-31	--	0	--	1300	2.0	400	<6.7	1.0	10	1.0
432113103224801	79-08-29	--	0	--	6500	<1.0	690	56	5.4	25	3.7
431632103511501	79-08-31	--	0	--	200	2.0	7	<18	.5	<9.1	.6
431242103451001	79-08-30	--	0	--	600	1.0	30	<37	.3	<22	<.4
430416103524101	79-08-30	--	0	--	350	<1.0	10	<19	<.3	11	<.4
HAAKON											
440253101180801	79-08-16	--	0	--	280	9.0	30	<31	<.3	<15	<.4
435957101214001	79-08-17	--	0	--	1200	5.0	30	<67	6.6	43	9.7
442910101203801	79-08-15	--	0	--	360	7.0	30	<39	.5	<21	<.4
HUTCHINSON											
431727097345401	79-09-05	--	0	--	6200	1.0	9	27	<.3	39	<.4

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	TRITIUM TOTAL (PCI/L) (07000)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	CARBON- 14,DISS AP- PARENT AGE (YEARS BP) (28004)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)
				AURORA					
434409098354001	79-08-30	--	2.1	--	.06	<43	<.4	<13	<.4
434306098350401	79-07-31	--	--	--	--	--	--	--	--
				CHARLES MIX					
425356098170402	79-09-04	--	.28	--	.06	<18	<.4	16	<.4
				CUSTER					
434832103150501	79-08-02	--	.81	--	6.4	14	<.4	3.9	.5
				DAVISON					
434555098651201	79-07-26	<200	.39	>26000	.03	<36	<.4	24	<.4
				FALL RIVER					
432653103580501	79-07-02	<150	--	--	--	--	--	--	--
432834103203301	79-08-30	--	1.4	--	7.1	39	<.4	10	<.4
432813103210601	79-08-30	--	.55	--	31	38	1700	15	710
432549103215701	79-08-31	--	12	--	1.9	68	68	36	14
432214103234301	79-08-31	<200	2.2	--	.55	<9.9	1.5	9.3	1.1
432113103224801	79-08-29	<200	3.7	17000	.36	62	7.9	22	3.8
431632103511501	79-08-31	--	.19	--	.06	<26	.7	<8.5	.6
431242103451001	79-08-30	--	.49	--	.07	<55	.4	<20	<.4
430415103524101	79-08-30	<200	15	28000	<.01	<28	<.4	11	<.4
				HAAKON					
440253101180801	79-08-16	--	.84	--	<.01	<46	<.4	<14	<.4
435957101214001	79-08-17	--	3.6	--	<.01	<96	9.7	40	10
442910101203801	79-08-15	--	1.0	--	<.01	<58	.7	<19	<.4
				HUTCHINSON					
431727097345401	79-09-05	--	1.7	--	<.01	39	<.4	36	<.4

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	TIME	GEO-LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	TEMPER-ATURE, WATER (DEG C) (00010)
				JACKSON					
435528101120301	1S24E25BCCA	79-08-16	--	217FLRV	2400	6800	7.3	50	51.2
434955101312001	2S22E28BAD	79-08-06	0900	217NCSL	2730	2690	7.3	19	54.0
435001101155801	2S24E32ABAD	79-08-15	--	217NCSL	2420	2970	7.7	16	48.5
				JERAULD					
435945098443001	106N66W10CDBC	79-08-27	1105	112CRLK	116	920	7.2	41	11.0
440144098434701	107N66W34DADA	79-09-04	1015	112CRCK	115	1180	7.1	35	8.4
				LAWRENCE					
442504103415301	5N 3E 10CCB	79-08-28	--	331MDSN	550	--	--	--	--
442720103380601	6N 4E28ABCC	79-08-27	--	221SNDC	140	1540	7.0	67	10.5
443557103360401	7N 4E 28DBD	79-08-27	--	217FLRV	747	7920	7.4	18	17.2
				MCPHERSON					
455527098490301	128N66W 8ABBC	79-07-29	1000	300PLZC	1907	2400	7.0	28	27.0
				MEADE					
441219103090801	3N 8E21DAAD	79-07-31	--	217LKOT	1860	1050	7.6	11	16.7
442804103330401	6N 5E19AAAC	79-08-27	--	217FLRV	285	718	6.8	67	11.4
				MINER					
435331097274201	105N55W20BAA	79-08-23	1350	211NBRR	--	2500	7.0	--	11.5
435155097234401	105N55W26DCDD	79-08-16	1350	--	--	3650	7.2	28	10.5
435601097390401	105N57W 28BCC	79-08-31	1000	211NBRR	--	1573	7.4	108	13.0
435550097461601	105N58W 3ADDC	79-08-23	1150	211DKOT	--	2700	7.4	--	12.0
435949097492901	106N58W 8CCDA	79-08-23	1030	211CDLL	--	3160	7.1	--	15.0
440142097240201	107N55W35CADD	79-08-17	1230	211NBRR	225	2900	7.2	46	9.5
440331097473701	107N58W21DABC	79-08-23	1110	211DKOT	--	2920	7.9	--	19.0
441004097221301	108N55W13AAAA	79-08-23	1445	211NBRR	--	2350	7.0	--	10.0
441019097425201	108N57W 7DDBB	79-08-15	0930	--	1050	3400	6.7	70	18.2
441146097450001	108N58W 2AADA	79-08-23	0900	211DKOT	--	3800	7.9	--	12.5

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)
					JACKSON						
435528101120301	79-08-16	.6	110	0	34	5.0	1500	96	64	12	652
434955101312001	79-08-06	--	120	0	37	7.1	530	90	21	10	242
435001101155801	79-08-15	.2	29	0	9.3	1.2	700	98	57	5.2	605
					JERAULD						
435945098443001	79-08-27	--	350	12	100	24	49	23	1.1	13	410
440144098434701	79-09-04	--	330	78	92	25	63	28	1.5	11	310
					LAWRENCE						
442504103415301	79-08-26	--	--	--	--	--	--	--	--	--	--
442720103380601	79-08-27	.4	910	570	210	93	13	3	.2	7.6	416
443557103360401	79-08-27	--	260	22	66	23	66	35	1.8	7.9	291
					MCPHERSON						
455527098490301	79-07-29	--	1200	1100	340	91	160	28	2.0	23	182
					MEADE						
441219103090801	79-07-31	--	180	0	45	15	160	66	5.3	6.2	281
442804103330401	79-08-27	--	350	130	90	29	8.1	5	.2	6.7	264
					MINER						
435331097274201	79-08-23	--	--	--	--	--	--	--	--	19	--
435155097234401	79-08-16	--	2300	2100	600	200	160	13	1.4	19	280
435601097390401	79-08-31	.3	780	0	200	67	180	33	2.8	14	1700
435550097461601	79-08-23	--	--	--	--	--	--	--	--	23	--
435949097492901	79-08-23	--	--	--	--	--	--	--	--	14	--
440142097240201	79-08-17	--	1000	620	290	67	280	37	3.9	19	460
440331097473701	79-08-23	--	--	--	--	--	--	--	--	12	--
441004097221301	79-08-23	--	--	--	--	--	--	--	--	10	--
441019097425201	79-08-15	--	110	0	30	9.3	650	92	27	10	220
441146097450001	79-08-23	--	--	--	--	--	--	--	--	6.0	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	BROMIDE DISSOLVED (MG/L AS BR) (71870)	IODIDE, DISSOLVED (MG/L AS I) (71865)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)
					JACKSON						
435528101120301	79-08-16	0	530	2300	370	2.7	1.5	.26	30	3990	4580
434955101312001	79-08-06	0	198	990	59	1.2	.6	.04	25	1750	1780
435001101155801	79-08-15	0	500	960	69	2.3	.5	.10	24	1980	2070
					JERAULD						
435945098443001	79-08-27	0	410	160	8.7	.3	--	--	35	--	392
440144098434701	79-09-04	0	254	230	6.2	.3	--	--	29	--	611
					LAWRENCE						
442504103415301	79-08-28	--	--	--	--	--	--	--	--	--	--
442720103360601	79-08-27	--	341	580	4.2	.4	.0	.00	9.7	1180	1130
443557103360401	79-08-27	--	239	200	2.1	.3	.0	.01	8.7	511	520
					MCPHERSON						
455527098490301	79-07-29	0	149	1200	53	.7	.2	.01	6.2	2100	1980
					MEADE						
441219103090801	79-07-31	0	230	320	3.5	.4	.0	.00	9.8	682	702
442804103330401	79-08-27	--	217	190	1.8	.5	.0	.00	8.5	456	469
					MINER						
435331097274201	79-08-23	--	--	--	--	--	--	--	--	--	--
435155097234401	79-08-16	0	280	2000	87	.7	--	--	28	--	3140
435601097390401	79-08-31	0	1390	810	20	1.0	.3	.15	13	1470	2150
435550097461601	79-08-23	--	--	--	--	--	--	--	--	--	--
435949097492901	79-08-23	--	--	--	--	--	--	--	--	--	--
440142097240201	79-08-17	0	460	1300	12	.3	--	--	30	--	2010
440331097473701	79-08-23	--	--	--	--	--	--	--	--	--	--
441004097221301	79-08-23	--	--	--	--	--	--	--	--	--	--
441019097425201	79-08-15	0	180	1000	230	2.6	--	.04	9.3	2130	2060
441146097450001	79-08-23	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	NITRO- GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)
JACKSON											
435528101120301	79-08-16	5.43	.01	.000	.01	--	4.100	3.3	3.3	.000	--
434955101312001	79-08-06	2.38	--	--	--	--	--	.22	--	.010	--
435001101155801	79-08-15	2.69	.00	.020	.02	--	1.700	1.6	1.6	.030	--
JERAULD											
435945098443001	79-08-27	.53	--	--	--	.01	--	--	--	.020	.030
440144098434701	79-09-04	.59	--	--	--	.01	--	--	--	.020	.030
LAWRENCE											
442504103415301	79-08-28	--	--	--	--	--	--	--	--	--	--
442720103380601	79-08-27	1.60	2.1	.020	2.1	--	.030	.52	2.6	.000	--
443557103360401	79-08-27	.70	.01	.000	.01	--	.800	1.1	1.1	.000	--
MCPHERSON											
455527098490301	79-07-29	2.86	--	--	--	--	--	1.0	--	.030	--
MEADE											
441219103090801	79-07-31	.93	.01	.000	.01	--	.250	.17	.18	.010	--
442804103330401	79-08-27	.62	.00	.000	.00	--	.340	.66	.66	.000	--
MINER											
435331097274201	79-08-23	--	--	--	--	--	--	--	--	--	--
435155097234401	79-08-16	4.27	--	--	--	8.5	--	--	--	.010	.000
435601097390401	79-08-31	2.00	.00	.000	.00	--	1.500	1.2	1.2	.010	--
435550097461601	79-08-23	--	--	--	--	--	--	--	--	--	--
435949097492901	79-08-23	--	--	--	--	--	--	--	--	--	--
440142097240201	79-08-17	2.73	--	--	--	.14	--	--	--	.010	.010
440331097473701	79-08-23	--	--	--	--	--	--	--	--	--	--
441004097221301	79-08-23	--	--	--	--	--	--	--	--	--	--
441019097425201	79-08-15	2.90	--	--	--	.96	--	--	--	--	--
441146097450001	79-08-23	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CYANIDE TOTAL (MG/L AS CN) (00720)	SULFIDE TOTAL (MG/L AS S) (00745)
		JACKSON			
435528101120301	79-08-16	--	.5	--	.0
434955101312001	79-08-06	--	2.7	--	.2
435001101155801	79-08-15	--	.5	--	.7
		JERAULD			
435945098443001	79-08-27	--	--	--	--
440144098434701	79-09-04	--	--	--	--
		LAWRENCE			
442504103415301	79-08-28	--	--	.01	--
442720103380601	79-08-27	--	9.1	--	.3
443557103360401	79-08-27	--	9.8	--	.7
		MCPHERSON			
455527098490301	79-07-29	--	1.3	--	.0
		MEADE			
441219103090801	79-07-31	--	.1	--	.3
442804103330401	79-08-27	--	1.9	--	.3
		MINER			
435331097274201	79-08-23	--	--	--	--
435155097234401	79-08-16	--	--	--	--
435601097390401	79-08-31	--	--	--	.0
435550097461601	79-08-23	--	--	--	--
435949097492901	79-08-23	--	--	--	--
440142097240201	79-08-17	--	--	--	--
440331097473701	79-08-23	--	--	--	--
441004097221301	79-08-23	--	--	--	--
441019097425201	79-08-15	--	--	--	--
441146097450001	79-08-23	--	--	--	--

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)
			JACKSON						
435528101120301	1S24E25BCCA	79-08-16	0	1	0	1800	0	10	--
434955101312001	2S22E28BAD	79-08-06	0	0	0	680	1	0	--
435001101155801	2S24E32ABAD	79-08-15	0	0	0	1200	0	0	--
			JERAULD						
435945098443001	106N66W10CDBC	79-08-27	--	--	--	270	--	--	--
440144098434701	107N66W34DADA	79-09-04	--	--	--	310	--	--	--
			LAWRENCE						
442504103415301	5N 3E 10CCB	79-06-28	--	--	--	--	0	--	--
442720103380601	6N 4E28ABCC	79-08-27	0	0	10	60	<1	0	--
443557103360401	7N 4E 28DBD	79-08-27	0	0	20	50	<1	0	--
			MCPHERSON						
455527098490301	128N66W 8ABBC	79-07-29	0	0	0	380	0	0	--
			MEADE						
441219103090801	3N 8E21DAAD	79-07-31	0	2	20	80	<1	0	--
442804103330401	6N 5E19AAAC	79-08-27	0	0	20	80	<1	0	--
			MINER						
435331097274201	105N55W20BAA	79-08-23	--	--	--	--	--	--	--
435155097234401	105N55W26DCDD	79-08-16	--	--	--	320	--	--	--
435601097390401	105N57W 28BCC	79-08-31	0	1	0	710	0	10	--
435550097461601	105N58W 3ADDC	79-08-23	--	--	--	--	--	--	--
435949097492901	106N58W 8CCDA	79-08-23	--	--	--	--	--	--	--
440142097240201	107N55W35CADD	79-08-17	--	--	--	1100	--	--	--
440331097473701	107N58W21DABC	79-08-23	--	--	--	--	--	--	--
441004097221301	108N55W13AAAA	79-08-23	--	--	--	--	--	--	--
441019097425201	108N57W 7DDBB	79-08-15	0	1	10	1700	<1	0	<3
441146097450001	108N58W 2AADA	79-08-23	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, SUS- PENDED RECOV- ERABLE (UG/L AS FE) (01044)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)
					JACKSON						
435528101120301	79-08-16	0	--	--	250	0	560	60	.2	--	0
434955101312601	79-08-06	0	300	1400	1100	0	290	120	.0	--	0
435001101155801	79-08-15	0	--	--	610	0	190	30	.4	--	0
					JERAULD						
435945098443001	79-08-27	--	--	--	40	--	--	1600	--	--	--
440144098434701	79-09-04	--	--	--	390	--	--	1400	--	--	--
					LAWRENCE						
442504103415301	79-08-28	--	--	--	--	0	--	--	--	--	--
442720103380601	79-08-27	2	--	--	60	0	70	<1	.0	--	<10
443557103360401	79-08-27	1	--	--	1200	0	60	20	.0	--	<10
					MCPHERSON						
455527098490301	79-07-29	0	0	1500	1500	0	130	130	.2	--	0
					MEADE						
441219103090801	79-07-31	0	--	--	2600	0	80	150	.0	--	<10
442804103330401	79-08-27	1	--	--	2400	0	50	140	.0	--	<10
					MINER						
435331097274201	79-08-23	--	--	--	--	--	--	--	--	--	--
435155097234401	79-08-16	--	--	--	230	--	--	9600	--	--	--
435601097390401	79-08-31	0	--	--	760	0	130	100	.0	--	3
435550097461601	79-08-23	--	--	--	--	--	--	--	--	--	--
435949097492901	79-08-23	--	--	--	--	--	--	--	--	--	--
440142097240201	79-08-17	--	--	--	4000	--	--	1200	--	--	--
440331097473701	79-08-23	--	--	--	--	--	--	--	--	--	--
441004097221301	79-08-23	--	--	--	--	--	--	--	--	--	--
441019097425201	79-08-15	1	--	--	20	0	120	30	--	.5	<10
441146097450001	79-08-23	--	--	--	--	--	--	--	--	--	--

STATION NUMBER	DATE OF SAMPLE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) (01516)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)
					JACKSON						
435528101120301	79-08-16	--	0	--	1400	7.0	100	<65	.5	<33	<.4
434955101312001	79-08-06	--	0	--	1200	1.0	20	<22	1.0	24	.8
435001101155801	79-08-15	--	0	--	290	1.0	10	<22	<.3	<13	<.4
					JERAULD						
435945098443001	79-08-27	--	--	--	--	--	--	--	--	--	--
440144098434701	79-09-04	--	--	--	--	--	--	--	--	--	--
					LAWRENCE						
442504103415301	79-08-28	--	--	--	--	--	--	--	--	--	--
442720103380601	79-08-27	--	1	--	4600	<1.0	40	<20	<.3	8.6	<.4
443557103360401	79-08-27	--	0	--	1100	<1.0	30	9.5	<.3	16	<.4
					MCPHERSON						
455527098490301	79-07-29	--	0	--	9600	1.0	40	67	<.3	42	<.4
					MEADE						
441219103090801	79-07-31	--	0	--	1100	2.0	<3	<8.2	<.3	8.7	.4
442804103330401	79-08-27	--	0	--	1100	<1.0	60	5.6	.3	11	<.4
					MINER						
435331097274201	79-08-23	--	--	--	--	--	--	44	5.6	24	1.0
435155097234401	79-08-16	--	--	--	--	--	--	--	--	--	--
435601097390401	79-08-31	--	0	--	3000	1.0	70	56	<.3	29	<.4
435550097461601	79-08-23	--	--	--	--	--	--	<26	<.3	19	<.4
435949097492901	79-08-23	--	--	--	--	--	--	<22	<.3	<15	<.4
440142097240201	79-08-17	--	--	--	--	--	--	--	--	--	--
440331097473701	79-08-23	--	--	--	--	--	--	<21	<.3	<14	<.4
441004097221301	79-08-23	--	--	--	--	--	--	<22	.4	<11	<.4
441019097425201	79-08-15	0	0	0	1100	4.0	<3	--	--	--	--
441146097450001	79-08-23	--	--	--	--	--	--	<32	1.4	<18	1.6

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	TRITIUM TOTAL (PCI/L) (07000)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	CARBON-14,DISS AP-PARENT AGE (YEARS BP) (28004)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)
JACKSON									
435528101120301	79-08-16	--	5.4	--	.03	<95	.8	<30	<.4
434955101312001	79-08-06	<200	2.7	>36000	.02	<32	1.4	22	.6
435001101155801	79-08-15	--	1.2	--	.04	<33	<.4	<12	<.5
JERAULD									
435945098443001	79-08-27	--	--	--	--	--	--	--	--
440144098434701	79-09-04	--	--	--	--	--	--	--	--
LAWRENCE									
442504103415301	79-08-28	--	--	--	--	--	--	--	--
442720103380601	79-08-27	--	.31	--	1.8	<30	<.4	7.5	<.4
443557103360401	79-08-27	--	2.5	--	.07	14	<.4	15	.4
MCPHERSON									
455527098490301	79-07-29	<200	11	>28000	.23	99	<.4	39	<.4
MEADE									
441219103090801	79-07-31	--	.93	--	3.3	<12	<.4	8.1	.5
442804103330401	79-08-27	--	1.4	--	.15	8.3	.5	9.7	<.4
MINER									
435331097274201	79-08-23	--	3.4	--	.12	65	8.2	21	.9
435155097234401	79-08-16	--	--	--	--	--	--	--	--
435601097390401	79-08-31	--	5.2	--	.21	83	<.4	26	<.4
435550097461601	79-08-23	--	.41	--	.03	<36	<.4	17	<.4
435949097492901	79-08-23	--	.21	--	.02	<32	<.4	<14	<.4
440142097240201	79-08-17	--	--	--	--	--	--	--	--
440331097473701	79-08-23	--	.17	--	.07	<31	<.4	<13	<.4
441004097221301	79-08-23	--	.06	--	.05	<32	.6	<9.8	<.4
441019097425201	79-08-15	--	--	--	--	--	--	--	--
441146097450001	79-08-23	--	.17	--	.06	<47	2.0	<17	1.6

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	TIME	GEO-LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	TEMPER-ATURE, WATER (DEG C) (00010)
PENNINGTON									
435227102034801	2S13E14ACAD	79-09-07	--	217NCSL	2650	3680	7.6	29	46.0
434510102263101	3S14E28DADA	79-09-06	--	217LKOT	2640	634	7.3	20	40.2
TRIPP									
432336100494001	99N76W15CDA	79-09-05	--	217NCSL	1325	2420	6.7	51	35.2
432238100112501	99N79W21DABB	79-09-05	--	217NCSL	2025	2535	7.0	24	41.9
432044100121501	99N79W33CBC	79-09-04	--	217NCSL	1970	2375	6.8	34	46.6
432912099360501	100N74W16AAA	79-09-05	--	217NCSL	1220	2475	6.8	38	34.8
432906099513001	100N76W17ABB	79-09-06	--	217NCSL	1550	2720	6.7	49	38.1
433425099430501	101N74W 5CCDA	79-09-05	--	217NCSL	1350	2300	7.0	21	41.9
433030099554501	101N76W33BD	79-09-05	--	217NCSL	1380	2520	7.2	16	39.3
434021099391301	102N74W 28AAD	79-09-04	--	217NCSL	1220	2790	7.1	20	36.7
433907099453901	102N75W12CBBA	79-09-07	--	217NCSL	1195	2680	6.9	26	37.2
433830099452501	102N75W13BCB	79-09-05	--	211DKOT	1315	2180	7.2	17	36.8
433650099551005	102N76W28A	79-09-06	--	217NCSL	1310	2430	7.0	24	37.4

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)
					PENNINGTON						
435227102034801	79-09-07	--	49	0	14	3.1	850	97	54	8.2	726
434510102263101	79-09-06	--	150	0	45	10	82	52	2.9	9.2	250
					TRIPP						
432336100494001	79-09-05	--	1200	1100	370	70	90	14	1.1	17	159
432238100112501	79-09-05	--	1300	1200	400	70	88	13	1.1	23	156
432044100121501	79-09-04	--	1100	960	340	60	110	16	1.4	16	152
432912099360501	79-09-05	--	1300	1200	400	68	86	13	1.0	20	159
432906099513001	79-09-06	--	1300	1100	390	67	110	16	1.4	18	156
433425099430501	79-09-05	--	1200	1100	370	67	110	16	1.4	18	158
433030099554501	79-09-05	--	1300	1200	400	69	110	15	1.3	19	163
434021099391301	79-09-04	--	1400	1200	420	72	150	19	1.8	21	162
433907099453901	79-09-07	--	1200	1100	380	69	120	17	1.5	22	156
433830099452501	79-09-05	--	1200	1000	350	65	120	18	1.5	20	168
433650099551005	79-09-06	--	1200	1100	370	64	100	15	1.3	18	169

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	BROMIDE DIS-SOLVED (MG/L AS BR) (71870)	IODIDE, DIS-SOLVED (MG/L AS I) (71865)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
					PENNINGTON						
435227102034601	79-09-07	0	597	10	920	1.4	9.1	3.8	21	2150	2200
434510102263101	79-09-06	0	205	160	2.6	1.4	.1	.00	26	413	463
					TRIPP						
432336100494001	79-09-05	0	130	1100	160	2.7	.9	.01	19	1990	1920
432238100112501	79-09-05	0	130	1100	150	3.0	.9	.01	26	2020	1950
432044100121501	79-09-04	0	120	940	180	2.6	1.2	.01	32	1820	1770
432912099380501	79-09-05	0	130	1100	180	2.6	1.0	.01	17	2060	1970
432906099513001	79-09-06	0	130	1000	240	2.6	1.3	.01	21	2100	1940
433425099430501	79-09-05	0	130	1000	230	3.0	1.3	.01	19	1980	1910
433030099554501	79-09-05	0	130	1100	230	2.7	--	.02	19	2110	2040
434021099391301	79-09-04	0	130	1100	300	2.9	--	.02	17	2340	2170
433907099453901	79-09-07	0	130	1000	260	2.9	1.8	.02	21	2050	1970
433830099452501	79-09-05	0	140	960	200	2.9	1.2	.01	19	1900	1840
433650099551005	79-09-06	0	140	970	210	2.6	1.4	.01	17	1950	1850

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)
					PENNINGTON						
435227102034801	79-09-07	2.92	.01	.000	.01	--	3.100	2.7	2.7	.010	--
434510102263101	79-09-06	.56	.00	.000	.00	--	.770	.92	.92	.010	--
					TRIPP						
432336100494001	79-09-05	2.71	.00	.020	.01	--	.430	.23	.24	.010	--
432238100112501	79-09-05	2.75	.00	.020	.01	--	.570	.55	.56	.010	--
432044100121501	79-09-04	2.48	.00	.020	.01	--	.190	.52	.53	.010	--
432912099380501	79-09-05	2.80	.00	.020	.01	--	.350	.63	.64	.010	--
432906099513001	79-09-06	2.86	.01	.000	.01	--	.190	.46	.47	.000	--
433425099430501	79-09-05	2.69	.01	.000	.01	--	.160	.20	.21	.010	--
433030099554501	79-09-05	2.87	.00	.000	.00	--	.320	.26	.26	.010	--
434021099391301	79-09-04	3.18	.00	.000	.00	--	.620	.38	.38	.010	--
433907099453901	79-09-07	2.79	.00	.000	.00	--	.410	.58	.58	.010	--
433830099452501	79-09-05	2.58	.00	.000	.00	--	.380	.41	.41	.010	--
433650099551005	79-09-06	2.65	.01	.000	.01	--	.160	.31	.32	.010	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CYANIDE TOTAL (MG/L AS CN) (00720)	SULFIDE TOTAL (MG/L AS S) (00745)
		PENNINGTON			
435227102034801	79-09-07	3.1	--	--	.2
434510102263101	79-09-06	.5	--	--	.2
		TRIPP			
432336100494001	79-09-05	--	.0	--	.5
432238100112501	79-09-05	--	4.6	--	.5
432044100121501	79-09-04	--	33	--	.6
432912099360501	79-09-05	--	.0	--	.2
432906099513001	79-09-06	--	.3	--	.6
433425099430501	79-09-05	.0	--	--	.3
433030099554501	79-09-05	.6	--	--	.2
434021099391301	79-09-04	.0	--	--	.5
433907099453901	79-09-07	.0	--	--	1.3
433830099452501	79-09-05	.0	--	--	.4
433650099551005	79-09-06	--	6.4	--	.6

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)
			PENNINGTON						
435227102034801	2S13E14ACAD	79-09-07	0	1	400	2000	0	10	--
434510102263101	3S14E28DADA	79-09-06	0	3	0	70	0	10	--
			TRIPP						
432336100494001	99N76W15CDA	79-09-05	0	3	0	150	0	10	--
432238100112501	99N79W21DABB	79-09-05	0	1	0	360	0	10	--
432044100121501	99N79W33CBC	79-09-04	0	4	0	210	0	10	--
432912099380501	100N74W18AAA	79-09-05	0	2	0	170	0	10	--
432906099513001	100N76W17ABB	79-09-06	0	3	0	220	0	10	--
433425099430501	101N74W 5CCDA	79-09-05	0	3	0	200	0	10	--
433030099554501	101N76W33BD	79-09-05	0	2	0	200	0	10	--
434021099391301	102N74W 28AAD	79-09-04	0	3	0	280	0	10	--
433907099453901	102N75W12CBBA	79-09-07	0	2	0	240	0	10	--
433830099452501	102N75W13BCB	79-09-05	0	1	0	210	0	10	--
433650099551005	102N76W28A	79-09-06	0	3	0	200	0	10	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
					PENNINGTON						
435227102034801	79-09-07	13	--	--	160	0	240	10	.3	--	0
434510102263101	79-09-06	0	--	--	2400	0	80	110	.0	--	5
					TRIPP						
432336100494001	79-09-05	0	--	--	3300	0	100	110	.0	--	2
432238100112501	79-09-05	0	--	--	5000	0	220	160	.5	--	0
432044100121501	79-09-04	0	--	--	6500	0	140	130	.1	--	2
432912099360501	79-09-05	0	--	--	5000	3	110	100	.0	--	2
432906099513001	79-09-06	0	--	--	4400	0	110	60	.1	--	3
433425099430501	79-09-05	1	--	--	4400	2	110	90	.0	--	2
433030099554501	79-09-05	0	--	--	5500	2	100	100	.2	--	0
434021099391301	79-09-04	6	--	--	1900	0	120	100	.1	--	4
433907099453901	79-09-07	0	--	--	3400	0	130	120	.0	--	3
433830099452501	79-09-05	7	--	--	6200	0	120	140	.1	--	3
433650099551005	79-09-06	0	--	--	5200	2	100	120	.1	--	3

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS- SOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) (01516)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)
					PENNINGTON						
435227102034801	79-09-07	--	0	--	710	--	190	<29	.6	19	<.4
434510102263101	79-09-06	--	0	--	950	1.0	6	14	2.8	17	1.7
					TRIPP						
432336100494001	79-09-05	--	0	--	8100	4.0	50	<27	1.5	37	1.2
432238100112501	79-09-05	--	0	--	8700	5.0	10	55	2.4	42	1.6
432044100121501	79-09-04	--	0	--	7300	--	10	29	4.4	42	4.3
432912099380501	79-09-05	--	0	--	8500	5.0	10	<28	.8	33	.6
432906099513001	79-09-06	--	0	--	7800	--	10	63	1.6	41	1.2
433425099430501	79-09-05	--	0	--	7600	--	20	<24	1.2	33	1.3
433030099554501	79-09-05	--	0	--	8200	--	20	48	5.3	34	3.7
434021099391301	79-09-04	--	0	--	8400	--	30	<33	1.0	31	.5
433907099453901	79-09-07	--	0	--	7600	--	20	<27	.6	30	.4
433830099452501	79-09-05	--	0	--	7800	--	40	<24	1.4	29	1.3
433650099551005	79-09-06	--	0	--	7200	4.0	10	<28	.7	32	1.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	TRITIUM TOTAL (PCI/L) (07000)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	CARBON- 14,DISS AP- PARENT AGE (YEARS BP) (28004)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)
				PENNINGTON					
435227102034801	79-09-07	<200	1.5	>37000	<.01	<42	.9	18	<.4
434510102263101	79-09-06	<200	2.8	30000	<.01	21	4.1	16	1.9
				TRIPP					
432336100494001	79-09-05	--	2.2	--	<.01	<40	2.2	34	1.2
432236100112501	79-09-05	--	4.6	--	<.01	81	3.5	38	1.7
432044100121501	79-09-04	--	4.4	--	<.01	42	6.5	38	4.5
432912099380501	79-09-05	--	1.3	--	<.02	<41	1.2	30	.7
432906099513001	79-09-06	--	3.5	--	.10	93	2.4	36	1.2
433425099430501	79-09-05	--	2.1	--	<.01	<36	1.7	30	1.4
433030099554501	79-09-05	--	3.3	--	<.01	70	7.8	30	3.6
434021099391301	79-09-04	--	1.3	--	<.01	<46	1.5	28	.5
433907099453901	79-09-07	--	1.5	--	<.01	<39	.9	27	.4
433830099452501	79-09-05	--	1.4	--	<.01	<36	2.0	26	1.3
433650099551005	79-09-06	--	1.5	--	<.01	<41	1.1	28	1.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT- I- FIER	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH FIELD (UNITS) (00400)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	TEMPER- ATURE, WATER (DEG C) (00010)
				AURORA					
435046098330301	104N64W 6ACBA	80-05-29	1130	211DKOT	640	2450	7.5	--	--
				BROOKINGS					
441610096263901	109N47W 9BAB	80-07-15	--	112BGSX	16	610	--	--	11.0
441426096311401	109N47W19BBA	80-07-15	--	112BGSX	80	950	7.4	27	15.0
441223096294301	109N47W32BDD	80-07-15	--	112BGSX	90	810	7.4	21	15.0
442356096411201	111N49W22DDD	80-07-16	--	112BGSX	75	720	7.5	13	13.0
442442096400001	111N49W23AAA	80-07-16	--	112BGSX	52	870	--	--	13.0
442304096411201	111N49W27DDD	80-07-16	--	112BGSX	50	720	7.7	6.4	13.0
442435096543201	111N51W23AAD	80-07-16	1400	112BGSX	25	650	7.5	12	16.0
		80-07-16	1410	112BGSX	25	610	7.5	12	16.0
442441096553501	111N51W23BBB	80-07-16	--	112BGSX	40	1640	7.1	31	12.0
442310096553501	111N51W26CCB	80-07-16	--	112BGSX	30	1270	7.3	17	11.0
				BUTTE					
443859103502801	8N 2E14CDD	80-06-20	--	217FLRV	340	1640	7.2	15	12.1
				CHARLES MIX					
430826098190601	96N63W 8CDA	80-05-08	1600	211DKOT	672	1990	7.4	--	15.2
				CODINGTON					
450246097125501	118N53W 6ABC	80-07-17	1500	112BGSX	60	800	7.4	--	16.0
		80-07-17	1510	112BGSX	60	780	7.5	16	16.0
450332097162601	118N54W 3BCC	80-07-17	--	112BGSX	90	3500	7.0	61	13.0
450128097145501	118N54W13DDA	80-07-17	--	112BGSX	66	1670	7.0	44	15.0
				CUSTER					
433347103365101	6S 4E 4BADA	80-08-04	--	310MNLS	132	875	7.8	9.1	13.5

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)
AURORA											
435046096330301	80-05-29	--	--	--	--	--	--	--	--	--	--
BROOKINGS											
441610096283901	80-07-15	280	120	65	29	6.0	4	.2	.3	194	0
441426096311401	80-07-15	430	79	104	41	43	18	.9	2.7	426	0
441223096294301	80-07-15	380	110	92	36	27	13	.6	2.2	330	0
442356096411201	80-07-16	370	160	84	38	10	6	.2	1.1	258	0
442442096400001	80-07-16	2100	1800	122	435	18	2	.2	2.3	306	0
442304096411201	80-07-16	350	180	64	33	8.0	5	.2	2.2	200	0
442435096543201	80-07-16	340	150	89	29	10	--	.2	--	236	0
	80-07-16	340	150	88	29	11	--	.3	--	236	0
442441096553501	80-07-16	990	790	260	82	45	9	.6	7.0	240	0
442310096553501	80-07-16	750	570	198	62	27	--	.4	--	216	0
BUTTE											
443859103502801	80-06-20	290	150	63	31	540	80	14	10	172	--
CHARLES MIX											
430826098190601	80-05-08	--	--	--	--	--	--	--	--	--	--
CODINGTON											
450246097125501	80-07-17	410	--	108	35	22	--	.5	--	--	--
	80-07-17	410	150	106	36	22	--	.5	--	324	0
450332097182801	80-07-17	2500	2100	416	344	133	--	1.2	--	380	0
450128097145501	80-07-17	700	470	145	82	97	--	1.6	--	276	0
CUSTER											
433347103385101	80-08-04	410	78	69	57	16	8	.3	3.0	414	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	BROMIDE DISSOLVED (MG/L AS BR) (71870)	IODIDE, DISSOLVED (MG/L AS I) (71865)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)
					AURORA						
435046098330301	80-05-29	--	1200	--	--	--	--	--	--	--	--
					BROOKINGS						
441610096283901	80-07-15	159	25	15	.2	--	--	--	380	--	--
441426096311401	80-07-15	349	25	10	.5	--	--	--	516	--	--
441223096294301	80-07-15	271	25	11	.8	--	--	--	408	--	--
442356096411201	80-07-16	212	30	11	.2	--	--	--	480	--	--
442442096400001	80-07-16	251	50	20	.3	--	--	--	490	--	--
442304096411201	80-07-16	164	120	10	.2	--	--	--	448	--	--
442435096543201	80-07-16	194	45	2.5	.2	--	--	--	310	--	--
	80-07-16	194	40	2.5	.2	--	--	--	340	--	--
442441096553501	80-07-16	197	700	5.5	.3	--	--	--	1380	--	--
442310096553501	80-07-16	177	30	6.0	.2	--	--	--	980	--	--
					BUTTE						
443859103502801	80-06-20	140	1200	14	.2	.3	.00	8.0	2040	1950	2.77
					CHARLES MIX						
430826098190601	80-05-08	199	--	--	--	--	--	--	--	--	--
					CODINGTON						
450246097125501	80-07-17	--	60	2.5	.3	--	--	--	450	--	--
	80-07-17	266	60	2.5	.3	--	--	--	440	--	--
450332097182801	80-07-17	312	1720	142	.4	--	--	--	3470	--	--
450128097145501	80-07-17	226	75	313	.3	--	--	--	1200	--	--
					CUSTER						
433347103385101	80-08-04	330	41	15	.5	.1	.01	13	491	487	.67

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	NITRO- GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)
					AURORA						
435046098330301	80-05-29	--	--	--	--	--	--	--	--	--	--
					BROOKINGS						
441610096283901	80-07-15	--	--	--	--	--	--	--	--	--	--
441426096311401	80-07-15	--	--	--	--	--	--	--	--	--	--
441223096294301	80-07-15	--	--	--	--	--	--	--	--	--	--
442356096411201	80-07-16	--	--	--	--	--	--	--	--	--	--
442442096400001	80-07-16	--	--	--	--	--	--	--	--	--	--
442304096411201	80-07-16	--	--	--	--	--	--	--	--	--	--
442435096543201	80-07-16	--	--	--	--	--	--	--	--	--	--
	80-07-16	--	--	--	--	--	--	--	--	--	--
442441096553501	80-07-16	--	--	--	--	--	--	--	--	--	--
442310096553501	80-07-16	--	--	--	--	--	--	--	--	--	--
					BUTTE						
443859103502801	80-06-20	.03	.000	.03	.08	2.200	2.0	2.0	--	.000	--
					CHARLES MIX						
430826098190601	80-05-08	--	--	--	--	--	--	--	--	--	--
					CODINGTON						
450246097125501	80-07-17	--	--	--	--	--	--	--	--	--	--
	80-07-17	--	--	--	--	--	--	--	--	--	--
450332097182801	80-07-17	--	--	--	--	--	--	--	--	--	--
450128097145501	80-07-17	--	--	--	--	--	--	--	--	--	--
					CUSTER						
433347103365101	80-08-04	15	.010	15	16	.010	.81	16	--	.010	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CYANIDE TOTAL (MG/L AS CN) (00720)	SULFIDE TOTAL (MG/L AS S) (00745)
AURORA				
435046098330301	80-05-29	--	--	--
BROOKINGS				
441610096283901	80-07-15	--	--	--
441426096311401	80-07-15	--	--	--
441223096294301	80-07-15	--	--	--
442356096411201	80-07-16	--	--	--
442442096400001	80-07-16	--	--	--
442304096411201	80-07-16	--	--	--
442435096543201	80-07-16	--	--	--
	80-07-16	--	--	--
442441096553501	80-07-16	--	--	--
442310096553501	80-07-16	--	--	--
BUTTE				
443859103502801	80-06-20	3.6	--	.0
CHARLES MIX				
430826098190601	80-05-08	--	--	--
CODINGTON				
450246097125501	80-07-17	--	--	--
	80-07-17	--	--	--
450332097182801	80-07-17	--	--	--
450128097145501	80-07-17	--	--	--
CUSTER				
433347103385101	80-08-04	8.6	--	.2

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
			AURORA						
435046096330301	104N64W 6ACBA	80-05-29	--	--	--	--	--	--	--
			BROOKINGS						
441610096283901	109N47W 9BAB	80-07-15	--	--	--	--	--	--	--
441426096311401	109N47W19BBA	80-07-15	--	--	--	--	--	--	--
441223096294301	109N47W32BDD	80-07-15	--	--	--	--	--	--	--
442356096411201	111N49W22DDD	80-07-16	--	--	--	--	--	--	--
442442096400001	111N49W23AAA	80-07-16	--	--	--	--	--	--	--
442304096411201	111N49W27DDD	80-07-16	--	--	--	--	--	--	--
442435096543201	111N51W23AAD	80-07-16	--	--	--	--	--	--	--
		80-07-16	--	--	--	--	--	--	--
442441096553501	111N51W23BBB	80-07-16	--	--	--	--	--	--	--
442310096553501	111N51W26CCB	80-07-16	--	--	--	--	--	--	--
			BUTTE						
443859103502801	8N 2E14CDD	80-06-20	100	1	0	90	0	0	0
			CHARLES MIX						
430826098190601	96N63W 8CDA	80-05-08	--	--	--	--	--	--	--
			CODINGTON						
450246097125501	118N53W 6ABC	80-07-17	--	--	--	--	--	--	--
		80-07-17	--	--	--	--	--	--	--
450332097162801	118N54W 3BCC	80-07-17	--	--	--	--	--	--	--
450128097145501	118N54W13DDA	80-07-17	--	--	--	--	--	--	--
			CUSTER						
433347103385101	6S 4E 4BADA	80-08-04	10	15	300	90	<1	0	12

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)
					AURORA						
435046096330301	80-05-29	--	--	--	--	--	--	--	--	--	--
					BROOKINGS						
441610096283901	80-07-15	500	--	--	50	--	--	--	--	--	--
441426096311401	80-07-15	50	--	--	120	--	--	--	--	--	--
441223096294301	80-07-15	50	--	--	580	--	--	--	--	--	--
442356096411201	80-07-16	50	--	--	50	--	--	--	--	--	--
442442096400001	80-07-16	50	--	--	50	--	--	--	--	--	--
442304096411201	80-07-16	50	--	--	50	--	--	--	--	--	--
442435096543201	80-07-16	50	--	--	360	--	--	--	--	--	--
	80-07-16	70	--	--	320	--	--	--	--	--	--
442441096553501	80-07-16	50	--	--	1200	--	--	--	--	--	--
442310096553501	80-07-16	50	--	--	860	--	--	--	--	--	--
					BUTTE						
443859103502801	80-06-20	1600	15	160	30	.1	--	0	0	--	1600
					CHARLES MIX						
430826098190601	80-05-08	--	--	--	--	--	--	--	--	--	--
					CODINGTON						
450246097125501	80-07-17	70	--	--	1750	--	--	--	--	--	--
	80-07-17	80	--	--	1770	--	--	--	--	--	--
450332097182801	80-07-17	50	--	--	55	--	--	--	--	--	--
450128097145501	80-07-17	60	--	--	50	--	--	--	--	--	--
					CUSTER						
433347103365101	80-08-04	20	1	20	4	.0	--	<10	3	--	500

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) (01516)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	TRITIUM TOTAL (PCI/L) (07000)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L) (09511)	CARBON-14,DISS APPARENT AGE (YEARS BP) (28004)	URANIUM DISSOLVED, EXTRACTION (UG/L) (80020)
					AURORA						
435046098330301	80-05-29	--	--	--	--	--	--	--	--	--	--
					BROOKINGS						
441610096263901	80-07-15	--	64	--	--	--	--	--	--	--	--
441426096311401	80-07-15	--	30	--	--	--	--	--	--	--	--
441223096294301	80-07-15	--	39	--	--	--	--	--	--	--	--
442356096411201	80-07-16	--	10	--	--	--	--	--	--	--	--
442442096400601	80-07-16	--	199	--	--	--	--	--	--	--	--
442304096411201	80-07-16	--	46	--	--	--	--	--	--	--	--
442435096543201	80-07-16	--	57	--	--	--	--	--	--	--	--
	80-07-16	--	57	--	--	--	--	--	--	--	--
442441096553501	80-07-16	--	24	--	--	--	--	--	--	--	--
442310096553501	80-07-16	--	52	--	--	--	--	--	--	--	--
					BUTTE						
443859103502801	80-06-20	1.0	30	<23	--	20	--	<3.0	2.9	--	.38
					CHARLES MIX						
430826098190601	80-05-08	--	--	--	--	--	--	--	--	33000	--
					CODINGTON						
450246097125501	80-07-17	--	28	--	--	--	--	--	--	--	--
	80-07-17	--	27	--	--	--	--	--	--	--	--
450332097182801	80-07-17	--	1150	--	--	--	--	--	--	--	--
450128097145501	80-07-17	--	56	--	--	--	--	--	--	--	--
					CUSTER						
433347103365101	80-08-04	30	1800	7.5	.4	<4.1	.6	--	.59	--	12

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)
			AURORA		
435046098330301	80-05-29	--	--	--	--
			BROOKINGS		
441610096283901	80-07-15	--	--	--	--
441426096311401	80-07-15	--	--	--	--
441223096294301	80-07-15	--	--	--	--
442356096411201	80-07-16	--	--	--	--
442442096400001	80-07-16	--	--	--	--
442304096411201	80-07-16	--	--	--	--
442435096543201	80-07-16	--	--	--	--
	80-07-16	--	--	--	--
442441096553501	80-07-16	--	--	--	--
442310096553501	80-07-16	--	--	--	--
			BUTTE		
443859103502801	80-06-20	<34	--	20	--
			CHARLES MIX		
430826098190601	80-05-08	--	--	--	--
			CODINGTON		
450246097125501	80-07-17	--	--	--	--
	80-07-17	--	--	--	--
450332097162801	80-07-17	--	--	--	--
450128097145501	80-07-17	--	--	--	--
			CUSTER		
433347103365101	80-08-04	11	.6	<3.9	.6

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	TIME	GEO-LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	TEMPER-ATURE, WATER (DEG C) (00010)
			DAVISON						
433000098044501	100N60W8AAAA	80-07-30	1300	112ETHN	--	3550	7.5	--	16.0
433425098032501	101N60W 5CDDD	80-04-30	1245	211DKOT	--	2630	6.8	--	12.0
433315098010001	101N60W15BBBB	80-07-29	1030	211NBRR	--	2265	7.8	--	18.0
433235098024001	101N60W20AAAA	80-07-30	0730	112ETHN	--	2745	7.3	--	15.0
433327098063501	101N61W11DDCC	80-07-31	0745	211NBRR	--	1580	7.5	--	15.0
433141098062201	101N61W23DDDD	80-07-30	1200	211NBRR	--	2825	8.4	--	14.0
433611098035601	102N60W29CCCC	80-04-17	0830	211CDLL	--	2370	7.7	--	8.5
433813098095901	102N61W17DAAA	80-04-16	1530	211CDLL	--	2300	7.6	--	10.5
433744098191001	102N62W19BABB	80-04-30	1145	211CDLL	--	2750	7.6	--	12.0
434456098121601	103N61W 6CCCC	80-04-16	1205	211CDLL	--	2360	7.8	--	11.0
434131098084301	103N61W27CCBB	80-04-16	1500	211CDLL	--	2350	7.7	--	7.0
434142098182101	103N62W30DAAA	80-04-30	1115	211CDLL	--	2510	8.0	--	10.0
435041098043701	104N60W 6BDDD	80-04-16	1000	211DKOT	--	2410	8.4	--	13.5
434925097590201	104N60W12CCAC	80-04-15	0900	211DKOT	--	2230	7.7	--	12.0
434829098025401	104N60W17DDDC	80-04-16	0900	211CDLL	--	2460	7.8	--	11.0
435013098111101	104N61W 6DDDD	80-04-16	1145	211DKOT	--	3050	8.5	--	10.5
434825098062501	104N61W14DDDD	80-04-09	1230	--	--	2250	7.7	--	10.0
435013098073601	104N61W30DDD	80-04-30	0830	--	--	2800	7.6	--	13.0
434600098122501	104N61W31CCCC	80-04-30	0930	211DKOT	--	2600	7.6	--	11.0
434555098051201	104N61W36DDAA	80-04-16	1400	211DKOT	340	2600	7.6	6.4	12.0
		80-05-19	1300	211DKOT	340	2600	7.4	--	11.5
435012098184702	104N62W6DCCD2	80-07-30	0745	211CDLL	--	2450	8.1	--	15.0
			DAY						
452553097165701	123N53W15C	80-07-17	--	112BGSX	35	600	7.0	36	15.0
452538097172101	123N53W21AAA	80-07-17	--	112BGSX	30	610	7.4	15	14.0
452446097150901	123N53W26AAA	80-07-17	--	112BGSX	56	2500	6.9	79	12.0
			DEUEL						
444117096491901	114N50W10CCC	80-07-16	--	112BGSX	7.0	800	7.4	25	17.0
444045096492801	114N50W16DAA	80-07-16	--	112BGSX	37	1010	7.3	27	21.0
443933096504101	114N50W20DDD	80-07-16	--	112BGSX	48	1990	7.2	35	17.0
			HAND						
441653099153301	109N70W 4BABD	80-05-14	1100	310MNLS	1945	2425	6.9	--	25.6

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)
					DAVISON						
433000098044501	80-07-30	1500	1300	410	120	330	31	3.7	47	--	--
433425098032501	80-04-30	1300	1100	360	88	130	18	1.6	24	--	--
433315098010001	80-07-29	560	160	160	44	290	51	5.2	22	--	--
433235098024001	80-07-30	880	480	260	57	310	43	4.5	22	--	--
433327098063501	80-07-31	970	460	230	97	220	32	3.1	17	--	--
433141098062201	80-07-30	370	0	100	29	510	74	12	20	--	--
433611098035601	80-04-17	170	0	45	14	510	85	17	19	--	--
433813098095901	80-04-16	280	0	75	22	400	74	10	25	--	--
433744098191001	80-04-30	200	0	55	14	510	83	16	25	--	--
434456098121801	80-04-16	290	0	60	23	400	73	10	27	--	--
434131098084301	80-04-16	260	0	69	22	400	75	11	22	--	--
434142098182101	80-04-30	170	0	47	12	470	84	16	18	--	--
435041098043701	80-04-16	1200	1100	340	82	150	21	1.9	22	--	--
434925097590201	80-04-15	1100	980	310	82	170	24	2.2	32	--	--
434829096025401	80-04-16	460	10	120	39	390	63	7.9	26	--	--
435013098111101	80-04-16	120	0	31	9.6	610	91	25	17	--	--
434825098062501	80-04-09	1300	940	330	120	110	15	1.3	22	--	--
435013098073601	80-04-30	98	0	26	8.1	550	91	24	15	--	--
434600096122501	80-04-30	1300	1100	360	88	130	18	1.6	30	--	--
434555098051201	80-04-16	1300	1200	380	92	140	16	1.7	24	158	0
	80-05-19	--	--	--	--	--	--	--	--	--	--
435012098184702	80-07-30	53	0	14	4.4	540	95	32	9.6	--	--
					DAY						
452553097165701	80-07-17	280	97	58	33	8.0	--	.2	--	224	0
452538097172101	80-07-17	310	120	58	41	10	--	.2	--	240	0
452446097150901	80-07-17	1600	1300	360	170	40	--	.4	--	390	0
					DEUEL						
444117096491901	80-07-16	420	100	105	39	7.0	--	.1	--	394	0
444045096492801	80-07-16	650	370	163	59	20	--	.3	--	340	0
443933096504101	80-07-16	1200	880	275	116	48	--	.6	--	344	0
					HAND						
441653099153301	80-05-14	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	BROMIDE DISSOLVED (MG/L AS BR) (71870)	IODIDE, DISSOLVED (MG/L AS I) (71865)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)
					DAVISON						
433000098044501	80-07-30	220	2000	47	.4	--	--	22	--	3120	4.24
433425098032501	80-04-30	140	1300	92	1.4	--	--	4.8	--	2090	2.84
433315098010001	80-07-29	400	810	37	.6	--	--	15	--	1620	2.20
433235098024001	80-07-30	400	1100	26	.6	--	--	22	--	2040	2.77
433327098063501	80-07-31	510	950	19	.6	--	--	22	--	1870	2.54
433141098062201	80-07-30	570	890	61	.4	--	--	9.1	--	1970	2.68
433611098035601	80-04-17	380	760	140	.9	--	--	9.1	--	1730	2.35
433613098095901	80-04-16	310	690	150	1.0	--	--	8.2	--	1560	2.12
433744098191001	80-04-30	410	750	140	.8	--	--	6.8	--	1760	2.39
434456098121801	80-04-16	450	550	110	.8	--	--	9.5	--	1480	2.01
434131098084301	80-04-16	330	680	120	.8	--	--	9.4	--	1530	2.08
434142098182101	80-04-30	370	570	190	1.1	--	--	6.4	--	1540	2.09
435041098043701	80-04-16	130	1300	64	2.4	--	--	9.7	--	2050	2.79
434925097590201	80-04-15	130	1300	71	1.6	--	--	11	--	2060	2.80
434829098025401	80-04-16	450	710	150	.6	--	--	12	--	1720	2.34
435013098111101	80-04-16	200	1100	80	2.7	--	--	8.2	--	1980	2.69
434825098062501	80-04-09	380	1100	20	.2	--	--	16	--	1950	2.65
435013098073601	80-04-30	470	560	230	.7	--	--	2.4	--	1680	2.28
434600098122501	80-04-30	130	1300	100	1.3	--	--	3.5	--	2090	2.84
434555098051201	80-04-16	130	1300	110	2.3	--	--	10	--	2140	2.91
	80-05-19	142	--	--	--	--	--	--	--	--	--
435012098184702	80-07-30	450	620	150	1.4	--	--	6.0	--	1630	2.22
					DAY						
452553097165701	80-07-17	184	40	2.5	1.9	--	--	--	290	--	--
452538097172101	80-07-17	197	40	5.0	.2	--	--	--	300	--	--
452446097150901	80-07-17	320	425	158	.3	--	--	--	2230	--	--
					DEUEL						
444117096491901	80-07-16	323	30	3.0	.2	--	--	--	400	--	--
444045096492801	80-07-16	279	190	38	.2	--	--	--	880	--	--
443933096504101	80-07-16	282	660	45	.3	--	--	--	1810	--	--
					HAND						
441653099153301	80-05-14	145	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)
					DAVISON						
433000098044501	80-07-30	--	--	--	.36	--	--	--	--	.020	.010
433425098032501	80-04-30	--	--	--	.02	--	--	--	--	.010	.000
433315098010001	80-07-29	--	--	--	.16	--	--	--	--	.000	.000
433235098024001	80-07-30	--	--	--	.10	--	--	--	--	.010	.010
433327098063501	80-07-31	--	--	--	1.3	--	--	--	--	.010	.000
433141098062201	80-07-30	--	--	--	.11	--	--	--	--	.020	.010
433611098035601	80-04-17	--	--	--	.01	--	--	--	--	.010	.000
433813098095901	80-04-16	--	--	--	.20	--	--	--	--	.010	.000
433744098191001	80-04-30	--	--	--	.01	--	--	--	--	.020	.000
434456098121801	80-04-16	--	--	--	.07	--	--	--	--	.010	.000
434131098064301	80-04-16	--	--	--	.00	--	--	--	--	.010	.000
434142098162101	80-04-30	--	--	--	.13	--	--	--	--	.040	.000
435041098043701	80-04-16	--	--	--	.01	--	--	--	--	.010	.000
434925097590201	80-04-15	--	--	--	.01	--	--	--	--	.010	.000
434829098025401	80-04-16	--	--	--	.02	--	--	--	--	.010	.000
435013098111101	80-04-16	--	--	--	.01	--	--	--	--	.040	.030
434825098062501	80-04-09	--	--	--	.03	--	--	--	--	.030	.030
435013098073601	80-04-30	--	--	--	.01	--	--	--	--	.030	.000
434600098122501	80-04-30	--	--	--	.02	--	--	--	--	.070	.000
434555098051201	80-04-16	--	--	--	.04	--	--	--	--	.010	.000
	80-05-19	--	--	--	--	--	--	--	--	--	--
435012098184702	80-07-30	--	--	--	.92	--	--	--	--	.030	.010
					DAY						
452553097165701	80-07-17	--	--	--	--	--	--	--	--	--	--
452538097172101	80-07-17	--	--	--	--	--	--	--	--	--	--
452446097150901	80-07-17	--	--	--	--	--	--	--	--	--	--
					DEUEL						
444117096491901	80-07-16	--	--	--	--	--	--	--	--	--	--
444045096492801	80-07-16	--	--	--	--	--	--	--	--	--	--
443933096504101	80-07-16	--	--	--	--	--	--	--	--	--	--
					HAND						
441653099153301	80-05-14	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CYANIDE TOTAL (MG/L AS CN) (00720)	SULFIDE TOTAL (MG/L AS S) (00745)
		DAVISON		
433000098044501	80-07-30	--	--	--
433425098032501	80-04-30	--	--	--
433315098010001	80-07-29	--	--	--
433235098024001	80-07-30	--	--	--
433327098063501	80-07-31	--	--	--
433141098062201	80-07-30	--	--	--
433611098035601	80-04-17	--	--	--
433813098095901	80-04-16	--	--	--
433744098191001	80-04-30	--	--	--
434456098121801	80-04-16	--	--	--
434131098084301	80-04-16	--	--	--
434142098182101	80-04-30	--	--	--
435041098043701	80-04-16	--	--	--
434925097590201	80-04-15	--	--	--
434829098025401	80-04-16	--	--	--
435013098111101	80-04-16	--	--	--
434825098062501	80-04-09	--	--	--
435013098073601	80-04-30	--	--	--
434600098122501	80-04-30	--	--	--
434555098051201	80-04-16	--	--	--
	80-05-19	--	--	--
435012098184702	80-07-30	--	--	--
		DAY		
452553097165701	80-07-17	--	--	--
452538097172101	80-07-17	--	--	--
452446097150901	80-07-17	--	--	--
		DEUEL		
444117096491901	80-07-16	--	--	--
444045096492801	80-07-16	--	--	--
443933096504101	80-07-16	--	--	--
		HAND		
441653099153301	80-05-14	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
			DAVISON						
433000098044501	100N60W8AAAA	80-07-30	--	--	--	1500	--	--	--
433425098032501	101N60W 5CDDD	80-04-30	--	--	--	890	--	--	--
433315098010001	101N60W15BBBB	80-07-29	--	--	--	4400	--	--	--
433235098024001	101N60W20AAAA	80-07-30	--	--	--	3500	--	--	--
433327098063501	101N61W11DDCC	80-07-31	--	--	--	1300	--	--	--
433141098062201	101N61W23DDDD	80-07-30	--	--	--	7700	--	--	--
433611098035601	102N60W29CCCC	80-04-17	--	--	--	4500	--	--	--
433813098095901	102N61W17DAAA	80-04-16	--	--	--	4100	--	--	--
433744098191001	102N62W19BABB	80-04-30	--	--	--	6200	--	--	--
434456098121801	103N61W 6CCCC	80-04-16	--	--	--	4600	--	--	--
434131098084301	103N61W27CCBB	80-04-16	--	--	--	4500	--	--	--
434142098182101	103N62W30DAAA	80-04-30	--	--	--	530	--	--	--
435041098043701	104N60W 6BDDD	80-04-16	--	--	--	450	--	--	--
434925097590201	104N60W12CCAC	80-04-15	--	--	--	880	--	--	--
434829098025401	104N60W17DDDC	80-04-16	--	--	--	2800	--	--	--
435013098111101	104N61W 6DDDD	80-04-16	--	--	--	4000	--	--	--
434825098062501	104N61W14DDDD	80-04-09	--	--	--	1400	--	--	--
435013098073601	104N61W30DDDD	80-04-30	--	--	--	5200	--	--	--
434600098122501	104N61W31CCCC	80-04-30	--	--	--	590	--	--	--
434555098051201	104N61W36DDAA	80-04-16	--	--	--	510	--	--	--
		80-05-19	--	--	--	--	--	--	--
435012098184702	104N62W6DCCD2	80-07-30	--	--	--	5900	--	--	--
			DAY						
452553097165701	123N53W15C	80-07-17	--	--	--	--	--	--	--
452538097172101	123N53W21AAA	80-07-17	--	--	--	--	--	--	--
452446097150901	123N53W26AAA	80-07-17	--	--	--	--	--	--	--
			DEUEL						
444117096491901	114N50W10CCC	80-07-16	--	--	--	--	--	--	--
444045096492801	114N50W16DAA	80-07-16	--	--	--	--	--	--	--
443933096504101	114N50W20DDD	80-07-16	--	--	--	--	--	--	--
			HAAKON						
440202101394001	1N20E24BCAB	80-05-27	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
					DAVISON						
433000098044501	80-07-30	190	--	--	4100	--	--	--	--	--	--
433425098032501	80-04-30	1400	--	--	60	--	--	--	--	--	--
433315098010001	80-07-29	520	--	--	90	--	--	--	--	--	--
433235098024001	80-07-30	940	--	--	780	--	--	--	--	--	--
433327098063501	80-07-31	200	--	--	400	--	--	--	--	--	--
433141098062201	80-07-30	90	--	--	60	--	--	--	--	--	--
433611098035601	80-04-17	430	--	--	10	--	--	--	--	--	--
433813098095901	80-04-16	330	--	--	20	--	--	--	--	--	--
433744098191001	80-04-30	910	--	--	30	--	--	--	--	--	--
434456098121601	80-04-16	960	--	--	20	--	--	--	--	--	--
434131098084301	80-04-16	2500	--	--	30	--	--	--	--	--	--
434142098182101	80-04-30	170	--	--	30	--	--	--	--	--	--
435041098043701	80-04-16	1700	--	--	110	--	--	--	--	--	--
434925097590201	80-04-15	1800	--	--	70	--	--	--	--	--	--
434829098025401	80-04-16	810	--	--	20	--	--	--	--	--	--
435013098111101	80-04-16	390	--	--	30	--	--	--	--	--	--
434825098062501	80-04-09	30	--	--	120	--	--	--	--	--	--
435013098073601	80-04-30	160	--	--	10	--	--	--	--	--	--
434600098122501	80-04-30	2600	--	--	110	--	--	--	--	--	--
434555098051201	80-04-16	1700	--	--	100	--	--	--	--	--	--
	80-05-19	--	--	--	--	--	--	--	--	--	--
435012098184702	80-07-30	80	--	--	30	--	--	--	--	--	--
					DAY						
452553097165701	80-07-17	200	--	--	380	--	--	--	--	--	--
452538097172101	80-07-17	3300	--	--	660	--	--	--	--	--	--
452446097150901	80-07-17	790	--	--	2100	--	--	--	--	--	--
					DEUEL						
444117096491901	80-07-16	70	--	--	50	--	--	--	--	--	--
444045096492801	80-07-16	550	--	--	960	--	--	--	--	--	--
443933096504101	80-07-16	60	--	--	70	--	--	--	--	--	--
					HAAKON						
440202101394001	80-05-27	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) (01516)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	TRITIUM TOTAL (PCI/L) (07000)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L) (09511)	CARBON-14,DISS APPARENT AGE (YEARS BP) (28004)	URANIUM DISSOLVED, EXTRACTION (UG/L) (80020)
DAVISON											
433000098044501	80-07-30	--	--	--	--	--	--	--	--	--	--
433425098032501	80-04-30	--	--	--	--	--	--	--	--	--	--
433315098010001	80-07-29	--	--	--	--	--	--	--	--	--	--
433235098024001	80-07-30	--	--	--	--	--	--	--	--	--	--
433327098063501	80-07-31	--	--	--	--	--	--	--	--	--	--
433141098062201	80-07-30	--	--	--	--	--	--	--	--	--	--
433611098035601	80-04-17	--	--	--	--	--	--	--	--	--	--
433813098095901	80-04-16	--	--	--	--	--	--	--	--	--	--
433744098191001	80-04-30	--	--	--	--	--	--	--	--	--	--
434456098121801	80-04-16	--	--	--	--	--	--	--	--	--	--
434131098084301	80-04-16	--	--	--	--	--	--	--	--	--	--
434142098182101	80-04-30	--	--	--	--	--	--	--	--	--	--
435041098043701	80-04-16	--	--	--	--	--	--	--	--	--	--
434925097590201	80-04-15	--	--	--	--	--	--	--	--	--	--
434829098025401	80-04-16	--	--	--	--	--	--	--	--	--	--
435013098111101	80-04-16	--	--	--	--	--	--	--	--	--	--
434825098062501	80-04-09	--	--	--	--	--	--	--	--	--	--
435013098073601	80-04-30	--	--	--	--	--	--	--	--	--	--
434600098122501	80-04-30	--	--	--	--	--	--	--	--	--	--
434555098051201	80-04-16	--	--	--	--	--	--	--	--	--	--
	80-05-19	--	--	--	--	--	--	--	--	30000	--
435012098184702	80-07-30	--	--	--	--	--	--	--	--	--	--
DAY											
452553097165701	80-07-17	--	49	--	--	--	--	--	--	--	--
452538097172101	80-07-17	--	175	--	--	--	--	--	--	--	--
452446097150901	80-07-17	--	127	--	--	--	--	--	--	--	--
DEUEL											
444117096491901	80-07-16	--	60	--	--	--	--	--	--	--	--
444045096492801	80-07-16	--	61	--	--	--	--	--	--	--	--
443933096504101	80-07-16	--	684	--	--	--	--	--	--	--	--
HAAKON											
440202101394001	80-05-27	--	--	--	--	--	--	3.0	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)
		DAVISON			
433000098044501	80-07-30	--	--	--	--
433425098032501	80-04-30	--	--	--	--
433315098010001	80-07-29	--	--	--	--
433235098024001	80-07-30	--	--	--	--
433327098063501	80-07-31	--	--	--	--
433141098062201	80-07-30	--	--	--	--
433611098035601	80-04-17	--	--	--	--
433813098095901	80-04-16	--	--	--	--
433744098191001	80-04-30	--	--	--	--
434456098121601	80-04-16	--	--	--	--
434131098084301	80-04-16	--	--	--	--
434142098182101	80-04-30	--	--	--	--
435041098043701	80-04-16	--	--	--	--
434925097590201	80-04-15	--	--	--	--
434829098025401	80-04-16	--	--	--	--
435013098111101	80-04-16	--	--	--	--
434825098062501	80-04-09	--	--	--	--
435013098073601	80-04-30	--	--	--	--
434600098122501	80-04-30	--	--	--	--
434555098051201	80-04-16	--	--	--	--
	80-05-19	--	--	--	--
435012098184702	80-07-30	--	--	--	--
		DAY			
452553097165701	80-07-17	--	--	--	--
452538097172101	80-07-17	--	--	--	--
452446097150901	80-07-17	--	--	--	--
		DEUEL			
444117096491901	80-07-16	--	--	--	--
444045096492601	80-07-16	--	--	--	--
443933096504101	80-07-16	--	--	--	--
		HAAKON			
440202101394001	80-05-27	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	TIME	GEO-LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	TEMPER-ATURE, WATER (DEG C) (00010)
			HAND						
443401098422602	113N66W25DADA2	80-05-12	1300	211DKOT	1195	2660	--	--	20.0
445236099173801	116N70W 7ADA	80-05-13	1200	--	1929	2380	7.0	--	22.5
			HANSON						
433233097445701	101N58W23AAAA	80-07-30	1300	112PMCK	--	2625	7.2	--	16.0
433054097445201	101N58W25CCCC	80-07-30	1100	112PMCK	--	2120	7.5	--	13.0
434010097360001	102N57W 1ADDC	80-07-30	1030	--	--	2550	7.6	--	14.0
434020097421501	102N57W 5BBBB	80-07-30	1150	--	--	4550	8.4	--	20.0
434415097363001	103N57W12DDDD	80-04-10	0900	112FLYD	--	1850	8.2	--	9.0
434236097364701	103N57W24ACDB	80-02-05	1105	400SXWS	--	2580	7.3	--	1.0
435055097394001	104N57W 3BACA	80-04-15	1400	400SXWS	--	1950	7.8	--	8.0
434825097374001	104N57W13CCCB	80-04-15	1530	112FLYD	--	1430	7.8	--	7.0
		80-04-15	1530	112FLYD	--	1368	7.4	--	7.0
434730097385501	104N57W22DDDD	80-04-09	1515	400SXWS	550	2030	7.1	--	12.0
		80-04-09	1515	400SXWS	550	2040	7.2	--	12.0
434530097364501	104N57W36DDDC	80-04-10	1100	112FLYD	--	1160	8.1	--	13.5
434530097363501	104N57W36DDDD	80-04-10	1000	400SXWS	--	1920	7.4	--	12.0
435045097494501	104N58W 5BBBB	80-04-09	1300	112FLYD	--	3710	8.4	--	9.5
434921097501801	104N58W 7CDAD	80-04-15	1330	211CDLL	--	1860	8.1	--	10.0
434640097493701	104N58W29CCCC	80-04-15	1600	112FLYD	--	2820	7.9	--	9.0
			HARDING						
451737103462501	15N 3E 5ADDD	80-07-15	--	211FXHL	60	864	8.4	1.8	10.0
452930103062001	16N 8E27DADC	80-07-15	--	211HLCK	325	1590	8.5	2.2	13.3
455203103311701	22N 5E17DADD	80-07-14	--	211HLCK	400	2020	8.7	2.2	13.4
455414103124501	22N 7E 2ADDC	80-07-15	--	125LDLW	150	3560	8.4	5.5	10.5
455343103041701	22N 8E 1CDBC	80-07-15	--	211FXHL	800	1880	8.5	2.9	16.6
			HUGHES						
443142099435401	112N74W 4DC	80-07-02	--	211DKOT	1460	3020	7.9	9.2	23.7
		80-07-09	--	211DKOT	1460	--	--	--	23.7
443124099494801	112N75W10A	80-07-02	--	217INKR	1875	2400	7.1	21	29.6
		80-08-12	--	217INKR	1875	2470	7.1	21	29.7

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)
HAND											
443401098422602	80-05-12	--	--	--	--	--	--	--	--	--	--
445236099173801	80-05-13	--	--	--	--	--	--	--	--	--	--
HANSON											
433233097445701	80-07-30	570	160	150	48	340	55	6.2	19	--	--
433054097445201	80-07-30	1100	740	300	91	53	9	.7	24	--	--
434010097360001	80-07-30	1600	1400	450	120	49	6	.5	1.8	--	--
434020097421501	80-07-30	2700	2200	500	350	130	9	1.1	21	--	--
434415097363001	80-04-10	680	420	190	50	210	39	3.5	16	--	--
434236097364701	80-02-05	1100	750	250	110	120	19	1.6	12	--	--
435055097394001	80-04-15	720	450	200	54	130	28	2.1	18	--	--
434825097374001	80-04-15	560	330	150	44	77	22	1.4	23	--	--
	80-04-15	560	330	150	44	77	22	1.4	23	--	--
434730097365501	80-04-09	760	510	200	64	180	33	2.8	17	--	--
	80-04-09	760	510	200	64	180	33	2.8	17	--	--
434530097364501	80-04-10	210	0	57	17	170	62	5.1	13	--	--
434530097363501	80-04-10	710	460	200	52	150	31	2.4	17	--	--
435045097494501	80-04-09	1300	1100	290	130	400	40	4.9	24	--	--
434921097501801	80-04-15	280	96	79	19	300	69	7.9	12	--	--
434640097493701	80-04-15	850	700	240	61	330	45	4.9	21	--	--
HARDING											
451737103462501	80-07-15	43	0	9.9	4.5	180	89	12	5.2	350	4
452930103062001	80-07-15	6	0	1.6	.5	350	99	62	1.8	530	13
455203103311701	80-07-14	5	0	2.0	.0	430	99	84	1.2	710	25
455414103124501	80-07-15	27	0	6.0	2.8	770	98	65	3.4	960	8
455343103041701	80-07-15	4	0	1.4	.2	390	99	82	1.4	700	16
HUGHES											
443142099435401	80-07-02	51	0	12	4.9	610	95	38	12	560	--
	80-07-09	--	--	--	--	--	--	--	--	--	--
443124099494801	80-07-02	1500	1300	430	95	50	7	.6	17	180	--
	80-08-12	--	--	--	--	--	--	--	--	182	--

STATION NUMBER	DATE OF SAMPLE	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	BROMIDE DISSOLVED (MG/L AS BR) (71870)	IODIDE, DISSOLVED (MG/L AS I) (71865)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)
					HAND						
443401098422602	80-05-12	131	--	--	--	--	--	--	--	--	--
445236099173801	80-05-13	146	--	--	--	--	--	--	--	--	--
					HANSON						
433233097445701	80-07-30	410	900	23	.5	--	--	18	--	1750	2.38
433054097445201	80-07-30	380	910	5.7	.6	--	--	21	--	1640	2.23
434010097360001	80-07-30	230	1400	13	.5	--	--	16	--	2210	3.01
434020097421501	80-07-30	500	2300	39	.5	--	--	13	--	3770	5.13
434415097363001	80-04-10	260	720	43	.3	--	--	25	--	1410	1.92
434236097364701	80-02-05	330	890	26	.3	--	--	24	--	1650	2.24
435055097394001	80-04-15	270	790	25	1.4	--	--	9.3	--	1390	1.89
434825097374001	80-04-15	230	470	31	.8	--	--	11	--	950	1.29
	80-04-15	230	470	31	.8	--	--	11	--	950	--
434730097385501	80-04-09	250	860	35	.7	--	--	13	--	1520	2.07
	80-04-09	250	860	35	.7	--	--	13	--	1520	--
434530097364501	80-04-10	320	220	39	1.2	--	--	30	--	742	1.01
434530097363501	80-04-10	250	780	41	.5	--	--	12	--	1410	1.92
435045097494501	80-04-09	180	1600	180	.3	--	--	27	--	2830	3.85
434921097501801	80-04-15	180	700	44	.6	--	--	25	--	1290	1.75
434640097493701	80-04-15	150	1200	150	.7	--	--	31	--	2130	2.90
					HARDING						
451737103462501	80-07-15	300	120	10	.5	.1	.01	8.5	505	515	.69
452930103062001	80-07-15	460	270	14	2.2	.2	.01	9.7	936	915	1.27
455203103311701	80-07-14	630	320	6.4	2.4	.2	.01	8.6	1190	1130	1.62
455414103124501	80-07-15	800	920	4.0	1.0	.3	.00	7.2	2290	2200	3.11
455343103041701	80-07-15	600	210	19	2.9	.1	.05	11	1010	986	1.37
					HUGHES						
443142099435401	80-07-02	460	250	510	4.5	4.2	1.1	9.4	1720	1700	2.34
	80-07-09	--	--	--	--	--	--	--	--	--	--
443124099494801	80-07-02	150	1300	64	.4	.1	.01	13	2180	2060	2.96
	80-08-12	149	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)
					HAND						
443401098422602	80-05-12	--	--	--	--	--	--	--	--	--	--
445236099173801	80-05-13	--	--	--	--	--	--	--	--	--	--
					HANSON						
433233097445701	80-07-30	--	--	--	.07	--	--	--	--	.090	.020
433054097445201	80-07-30	--	--	--	.06	--	--	--	--	.020	.010
434010097360001	80-07-30	--	--	--	.23	--	--	--	--	.020	.020
434020097421501	80-07-30	--	--	--	24	--	--	--	--	.010	.000
434415097363001	80-04-10	--	--	--	.16	--	--	--	--	.030	.030
434236097364701	80-02-05	--	--	--	4.4	--	--	--	--	.150	.140
435055097394001	80-04-15	--	--	--	.03	--	--	--	--	.010	.000
434825097374001	80-04-15	--	--	--	.77	--	--	--	--	.020	.000
	80-04-15	--	--	--	.77	--	--	--	--	.020	.000
434730097385501	80-04-09	--	--	--	.04	--	--	--	--	.020	.010
	80-04-09	--	--	--	.04	--	--	--	--	.020	.030
434530097364501	80-04-10	--	--	--	.00	--	--	--	--	.080	.070
434530097363501	80-04-10	--	--	--	.06	--	--	--	--	.020	.010
435045097494501	80-04-09	--	--	--	14	--	--	--	--	.070	.030
434921097501801	80-04-15	--	--	--	.03	--	--	--	--	.030	.030
434640097493701	80-04-15	--	--	--	.03	--	--	--	--	.010	.000
					HARDING						
451737103462501	80-07-15	.37	.010	.38	.34	.030	.43	.81	--	.050	--
452930103062001	80-07-15	.00	.050	.03	.00	.270	.72	.75	--	.270	--
455203103311701	80-07-14	.24	.030	.27	.18	.190	.78	1.1	--	.400	--
455414103124501	80-07-15	.08	.040	.12	.08	.180	.56	.70	--	.220	--
455343103041701	80-07-15	.00	.010	.00	.00	.510	.79	.79	--	.380	--
					HUGHES						
443142099435401	80-07-02	.00	.010	.00	.00	2.900	3.5	3.5	--	.070	--
	80-07-09	--	--	--	--	--	--	--	--	--	--
443124099494801	80-07-02	.00	.000	.00	.00	.240	.59	.59	--	.050	--
	80-08-12	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CYANIDE TOTAL (MG/L AS CN) (00720)	SULFIDE TOTAL (MG/L AS S) (00745)
		HAND		
443401098422602	80-05-12	--	--	--
445236099173801	80-05-13	--	--	--
		HANSON		
433233097445701	80-07-30	--	--	--
433054097445201	80-07-30	--	--	--
434010097360001	80-07-30	--	--	--
434020097421501	80-07-30	--	--	--
434415097363001	80-04-10	--	--	--
434236097364701	80-02-05	--	--	--
435055097394001	80-04-15	--	--	--
434825097374001	80-04-15	--	--	--
	80-04-15	--	--	--
434730097385501	80-04-09	--	--	--
	80-04-09	--	--	--
434530097364501	80-04-10	--	--	--
434530097363501	80-04-10	--	--	--
435045097494501	80-04-09	--	--	--
434921097501801	80-04-15	--	--	--
434640097493701	80-04-15	--	--	--
		HARDING		
451737103462501	80-07-15	5.5	--	.0
452930103062001	80-07-15	7.0	--	.0
455203103311701	80-07-14	10	--	.0
455414103124501	80-07-15	13	--	.0
455343103041701	80-07-15	12	--	.0
		HUGHES		
443142099435401	80-07-02	15	--	.2
	80-07-09	--	--	--
443124099494801	80-07-02	1.2	--	.5
	80-08-12	--	--	--

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
			HAND						
441653099153301	109N70W 4BABD	80-05-14	--	--	--	--	--	--	--
443401098422602	113N66W25DADA2	80-05-12	--	--	--	--	--	--	--
445236099173801	116N70W 7ADA	80-05-13	--	--	--	--	--	--	--
			HANSON						
433233097445701	101N58W23AAAA	80-07-30	--	--	--	1400	--	--	--
433054097445201	101N58W25CCCC	80-07-30	--	--	--	790	--	--	--
434010097360001	102N57W 1ADDC	80-07-30	--	--	--	500	--	--	--
434020097421501	102N57W 5BBBB	80-07-30	--	--	--	330	--	--	--
434415097363001	103N57W12DDDD	80-04-10	--	--	--	490	--	--	--
434236097364701	103N57W24ACDB	80-02-05	--	--	--	270	--	--	--
435055097394001	104N57W 3BACA	80-04-15	--	--	--	740	--	--	--
434825097374001	104N57W13CCCB	80-04-15	--	--	--	1600	--	--	--
		80-04-15	--	--	--	1600	--	--	--
434730097385501	104N57W22DDDD	80-04-09	--	--	--	420	--	--	--
		80-04-09	--	--	--	420	--	--	--
434530097364501	104N57W36DDDC	80-04-10	--	--	--	1200	--	--	--
434530097363501	104N57W36DDDD	80-04-10	--	--	--	230	--	--	--
435045097494501	104N58W 5BBBB	80-04-09	--	--	--	940	--	--	--
434921097501801	104N58W 7CDAD	80-04-15	--	--	--	740	--	--	--
434640097493701	104N58W29CCCC	80-04-15	--	--	--	1100	--	--	--
			HARDING						
451737103462501	15N 3E 5ADDD	80-07-15	0	1	50	160	1	0	8
452930103062001	18N 8E27DADC	80-07-15	0	1	40	690	1	10	2
455203103311701	22N 5E17DADD	80-07-14	0	1	0	1400	0	0	5
455414103124501	22N 7E 2ADDC	80-07-15	10	1	0	1700	0	0	7
455343103041701	22N 8E 1CDBC	80-07-15	10	1	90	1200	<1	0	4
			HUGHES						
443142099435401	112N74W 4DC	80-07-02	0	1	0	7300	0	0	3
443124099494601	112N75W10A	80-07-02	10	1	800	170	0	10	2
		80-08-12	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)
					HAND						
441653099153301	80-05-14	--	--	--	--	--	--	--	--	--	--
443401096422602	80-05-12	--	--	--	--	--	--	--	--	--	--
445236099173801	80-05-13	--	--	--	--	--	--	--	--	--	--
					HANSON						
433235097445701	80-07-30	70	--	--	950	--	--	--	--	--	--
433054097445201	80-07-30	50	--	--	340	--	--	--	--	--	--
434010097360001	80-07-30	22000	--	--	1000	--	--	--	--	--	--
434020097421501	80-07-30	6700	--	--	220	--	--	--	--	--	--
434415097363001	80-04-10	170	--	--	1300	--	--	--	--	--	--
434236097364701	80-02-05	90	--	--	20	--	--	--	--	--	--
435055097394001	80-04-15	1200	--	--	100	--	--	--	--	--	--
434825097374001	80-04-15	30	--	--	30	--	--	--	--	--	--
	80-04-15	30	--	--	30	--	--	--	--	--	--
434730097385501	80-04-09	1300	--	--	100	--	--	--	--	--	--
	80-04-09	1300	--	--	100	--	--	--	--	--	--
434530097364501	80-04-10	640	--	--	360	--	--	--	--	--	--
434530097363501	80-04-10	2000	--	--	250	--	--	--	--	--	--
435045097494501	80-04-09	40	--	--	2500	--	--	--	--	--	--
434921097501801	80-04-15	260	--	--	280	--	--	--	--	--	--
434640097493701	80-04-15	1900	--	--	1100	--	--	--	--	--	--
					HARDING						
451737103462501	80-07-15	10	2	30	5	.0	--	<10	13	--	170
452930103062001	80-07-15	40	0	30	5	.0	--	16	0	--	40
455203103311701	80-07-14	60	0	30	10	.0	--	6	0	--	150
455414103124501	80-07-15	80	0	40	0	.0	--	1	0	--	300
455343103041701	80-07-15	60	0	30	4	.0	--	<10	0	--	40
					HUGHES						
443142099435401	80-07-02	70	0	130	20	--	--	0	0	--	440
443124099494601	80-07-02	1300	0	60	60	.0	--	0	1	--	1000
	80-08-12	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	VANADIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) (01516)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	TRITIUM TOTAL (PCI/L) (07000)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	CARBON-14,DISS APPARENT AGE (YEARS BP) (28004)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)
					HAND						
441653099153301	80-05-14	--	--	--	--	--	--	--	--	34000	--
443401096422602	80-05-12	--	--	--	--	--	--	--	--	29000	--
445236099173601	80-05-13	--	--	--	--	--	--	--	--	32000	--
					HANSON						
433233097445701	80-07-30	--	--	--	--	--	--	--	--	--	--
433054097445201	80-07-30	--	--	--	--	--	--	--	--	--	--
434010097360001	80-07-30	--	--	--	--	--	--	--	--	--	--
434020097421501	80-07-30	--	--	--	--	--	--	--	--	--	--
434415097363001	80-04-10	--	--	--	--	--	--	--	--	--	--
434236097364701	80-02-05	--	--	--	--	--	--	--	--	--	--
435055097394001	80-04-15	--	--	--	--	--	--	--	--	--	--
434825097374001	80-04-15	--	--	--	--	--	--	--	--	--	--
	80-04-15	--	--	--	--	--	--	--	--	--	--
434730097385501	80-04-09	--	--	--	--	--	--	--	--	--	--
	80-04-09	--	--	--	--	--	--	--	--	--	--
434530097364501	80-04-10	--	--	--	--	--	--	--	--	--	--
434530097363501	80-04-10	--	--	--	--	--	--	--	--	--	--
435045097494501	80-04-09	--	--	--	--	--	--	--	--	--	--
434921097501801	80-04-15	--	--	--	--	--	--	--	--	--	--
434640097493701	80-04-15	--	--	--	--	--	--	--	--	--	--
					HARDING						
451737103462501	80-07-15	.0	4	10	.3	<4.4	<.4	--	.82	--	16
452930103062001	80-07-15	.0	20	<8.2	.6	<7.2	<.4	--	.07	--	.21
455203103311701	80-07-14	3.0	30	<8.8	1.4	<9.7	<.4	--	.06	--	.33
455414103124501	80-07-15	1.0	20	<20	.3	<19	<.4	--	.22	--	2.4
455343103041701	80-07-15	.0	10	<9.5	<.3	<9.4	<.4	--	.06	--	.09
					HUGHES						
443142099435401	80-07-02	1.0	500	<22	--	<17	--	<3.0	.61	>42000	.07
443124099494601	80-07-02	.0	190	55	--	120	--	<3.0	4.1	--	.06
	80-08-12	--	--	--	--	--	--	--	--	>2100	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)
			HAND		
441653099153301	80-05-14	--	--	--	--
443401098422602	80-05-12	--	--	--	--
445236099173801	80-05-13	--	--	--	--
			HANSON		
433233097445701	80-07-30	--	--	--	--
433054097445201	80-07-30	--	--	--	--
434010097360001	80-07-30	--	--	--	--
434020097421501	80-07-30	--	--	--	--
434415097363001	80-04-10	--	--	--	--
434236097364701	80-02-05	--	--	--	--
435055097394001	80-04-15	--	--	--	--
434825097374001	80-04-15	--	--	--	--
	80-04-15	--	--	--	--
434730097385501	80-04-09	--	--	--	--
	80-04-09	--	--	--	--
434530097364501	80-04-10	--	--	--	--
434530097363501	80-04-10	--	--	--	--
435045097494501	80-04-09	--	--	--	--
434921097501801	80-04-15	--	--	--	--
434640097493701	80-04-15	--	--	--	--
			HARDING		
451737103462501	80-07-15	15	.5	<4.1	<.4
452930103062001	80-07-15	<12	.9	<6.9	<.4
455203103311701	80-07-14	<13	2.1	<9.3	<.4
455414103124501	80-07-15	<29	.5	<19	<.4
455343103041701	80-07-15	<14	<.4	<9.0	<.4
			HUGHES		
445142099435401	80-07-02	<33	--	<17	--
443124099494801	80-07-02	61	--	110	--
	80-08-12	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT- I- FIER	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH FIELD (UNITS) (00400)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	TEMPER- ATURE, WATER (DEG C) (00010)
			JERAULD						
440634098400301	107N65W 5BBBA	80-05-15	1100	211DKOT	1420	2300	7.7	--	14.0
440144098434701	107N66W34DADA	80-05-29	1250	112CRCK	115	910	7.1	--	--
			JONES						
435548100560401	1N27E30DBB	80-07-08	--	217INKR	2460	1570	7.6	13	48.9
440655100253801	2N31E19DAD	80-07-10	--	217INKR	2080	2580	7.3	5.7	38.5
434931100225301	2S31E35CACC	80-07-01	--	211DKOT	1770	3100	7.7	38	35.4
			LAWRENCE						
442857103513401	6N 2E22ABBB	80-06-11	--	310MNLS	325	496	7.3	20	9.9
443320104004501	7N 1E20AAD	80-08-05	--	310MNLS	243	669	7.3	22	11.7
			LINCOLN						
431227096313901	97N48W21BCC	80-07-15	--	112BGSX	40	1880	7.0	58	15.0
431214096292701	97N48W22DAD	80-07-15	--	112BGSX	25	1050	7.0	37	14.0
431132096314201	97N48W29ADD	80-07-15	--	112BGSX	56	1550	6.9	71	15.5
			LYMAN						
434840100100501	104N78W 8BD	80-07-10	--	211DKOT	1620	2080	7.6	15	38.4
435400100090001	105N78W14ADDA	80-07-09	--	217NCSL	1624	2000	7.5	11	36.5
440050099560601	106N76W 3B	80-06-26	--	217DKOT	1437	1155	7.4	.0	27.4
			MCPHERSON						
455527098490301	128N66W 8ABBC	80-05-22	0800	300PLZC	1907	24	7.2	--	--
			MEADE						
441318103221301	3N 6E24CADD	80-08-08	--	310MNLS	824	474	7.3	20	15.0
			MINER						
435142097503901	105N58W31BACC	80-05-20	0830	211DKOT	630	2700	7.4	--	12.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)
JERAULD											
440634098400301	80-05-15	--	--	--	--	--	--	--	--	--	--
440144098434701	80-05-29	320	--	87	25	54	--	1.3	--	--	--
JONES											
435548100560401	80-07-08	71	0	23	3.0	780	95	41	11	386	--
440655100253801	80-07-10	960	890	280	61	260	37	3.7	20	164	--
434931100225301	80-07-01	30	0	7.0	3.0	700	97	56	9.0	1320	--
LAWRENCE											
442857103513401	80-08-11	250	10	57	26	1.9	2	.1	1.4	300	--
443320104004501	80-08-05	340	110	95	25	2.5	2	.1	1.4	272	--
LINCOLN											
431227096313901	80-07-15	1500	1200	358	139	90	12	1.0	17	360	0
431214096292701	80-07-15	590	400	168	41	19	7	.3	3.9	234	0
431132096314201	80-07-15	890	600	236	73	35	8	.5	8.4	354	0
LYMAN											
434840100100501	80-07-10	100	0	26	7.4	400	88	17	14	476	--
435400100090001	80-07-09	190	9	52	14	360	79	11	16	246	--
440050099560601	80-06-26	660	660	190	44	240	43	4.1	24	170	--
MCPHERSON											
455527098490301	80-05-22	--	--	--	--	--	--	--	--	--	--
MEADE											
441318103221301	80-08-08	240	3	59	23	1.5	1	.0	1.6	308	--
MINER											
435142097503901	80-05-20	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	BROMIDE DISSOLVED (MG/L AS BR) (71870)	IODIDE, DISSOLVED (MG/L AS I) (71865)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)
JERAULD											
440634098400301	80-05-15	117	--	--	--	--	--	--	--	--	--
440144098434701	80-05-29	--	--	--	--	--	--	--	--	--	--
JONES											
435548100560401	80-07-08	320	1300	73	2.7	.2	.05	12	2500	2410	3.40
440655100253801	80-07-10	130	1200	88	2.5	.3	.04	13	2110	1970	2.87
434931100225301	80-07-01	1080	170	270	4.3	3.0	.72	12	1880	1810	2.56
LAWRENCE											
442857103513401	80-08-11	240	5.9	1.0	.2	.0	.00	11	247	254	.34
443320104004501	80-08-05	230	120	1.0	.4	.0	.00	12	411	399	.56
LINCOLN											
431227096313901	80-07-15	295	440	313	.6	--	--	--	--	--	--
431214096292701	80-07-15	192	275	2.0	.3	--	--	--	736	--	--
431132096314201	80-07-15	290	275	65	.3	--	--	--	1200	--	--
LYMAN											
434840100100501	80-07-10	390	88	350	2.5	1.3	1.0	13	1200	1130	1.63
435400100090001	80-07-09	200	420	250	2.4	1.1	.59	12	1270	1240	1.73
440050099560601	80-06-26	140	920	100	1.9	.5	.03	11	1670	1540	2.27
MCPHERSON											
455527098490301	80-05-22	149	--	--	--	--	--	--	--	--	--
MEADE											
441318103221301	80-08-06	240	5.4	1.1	.4	.0	.00	11	240	249	.33
MINER											
435142097503901	80-05-20	138	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)
JERAULD											
440634098400301	80-05-15	--	--	--	--	--	--	--	--	--	--
440144098434701	80-05-29	--	--	--	--	--	--	--	--	--	--
JONES											
435548100560401	80-07-08	.00	.000	.00	.00	2.200	4.2	4.2	--	.000	--
440655100253801	80-07-10	.00	.000	.00	.00	1.500	1.8	1.8	--	.000	--
434931100225301	80-07-01	.00	.000	.00	.00	2.300	3.0	3.0	--	.090	--
LAWRENCE											
442857103513401	80-08-11	.81	.020	.83	.82	.000	.34	1.2	--	.020	--
443320104004501	80-08-05	.37	.010	.38	.41	.010	.50	.88	--	2.100	--
LINCOLN											
431227096313901	80-07-15	--	--	--	--	--	--	--	--	--	--
431214096292701	80-07-15	--	--	--	--	--	--	--	--	--	--
431132096314201	80-07-15	--	--	--	--	--	--	--	--	--	--
LYMAN											
434840100100501	80-07-10	.00	.000	.00	.00	1.500	2.0	2.0	--	.000	--
435400100090001	80-07-09	.00	.000	.00	.00	1.800	2.4	2.4	--	.000	--
440050099560601	80-06-26	.00	.010	.01	.01	2.200	2.2	2.2	--	.000	--
MCPHERSON											
455527098490301	80-05-22	--	--	--	--	--	--	--	--	--	--
MEADE											
441318103221301	80-08-08	.33	.000	.33	.30	.000	.29	.62	--	.030	--
MINER											
435142097503901	80-05-20	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CYANIDE TOTAL (MG/L AS CN) (00720)	SULFIDE TOTAL (MG/L AS S) (00745)
		JERAULD		
440634098400301	80-05-15	--	--	--
440144098434701	80-05-29	--	--	--
		JONES		
435548100560401	80-07-08	--	--	.3
440655100253801	80-07-10	--	--	.1
434931100225301	80-07-01	17	--	.2
		LAWRENCE		
442857103513401	80-08-11	3.9	--	--
443320104004501	80-06-05	2.1	--	.0
		LINCOLN		
431227096313901	80-07-15	--	--	--
431214096292701	80-07-15	--	--	--
431132096314201	80-07-15	--	--	--
		LYMAN		
434840100100501	80-07-10	--	--	.2
435400100090001	80-07-09	--	--	.3
440050099560601	80-06-26	3.6	--	.1
		MCPHERSON		
455527098490301	80-05-22	--	--	--
		MEADE		
441318103221301	80-08-08	4.7	--	.2
		MINER		
435142097503901	80-05-20	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
			JERAULD						
440634098400301	107N65W 5BBBA	80-05-15	--	--	--	--	--	--	--
440144098434701	107N66W34DADA	80-05-29	--	--	--	--	--	--	--
			JONES						
435548100560401	1N27E30DBB	80-07-08	10	1	0	1000	0	10	0
440655100253801	2N31E19DAD	80-07-10	0	1	100	410	0	10	1
434931100225301	2S31E35CACC	80-07-01	0	2	100	8000	0	0	8
			LAWRENCE						
442857103513401	6N 2E22ABBB	80-08-11	200	3	300	90	2	0	14
443320104004501	7N 1E20AAD	80-06-05	0	4	90	30	<1	10	12
			LINCOLN						
431227096313401	97N48W21BCC	80-07-15	--	--	--	--	--	--	--
431214096242701	97N48W22DAD	80-07-15	--	--	--	--	--	--	--
431132096314201	97N48W29ADD	80-07-15	--	--	--	--	--	--	--
			LYMAN						
434840100100501	104N78W 8BD	80-07-10	0	1	100	1900	1	20	0
435400100090001	105N78W14ADDA	80-07-09	0	1	100	1200	0	10	1
440050099560601	106N76W 3B	80-06-26	20	2	0	500	0	0	0
			MCPHERSON						
455527098490301	126N66W 8ABBC	80-05-22	--	--	--	--	--	--	--
			MEADE						
441318103221301	3N 6E24CADD	80-08-08	0	6	400	50	<1	10	7
			MINER						
435142097503901	105N56W31BACC	80-05-20	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
					JERAULD						
440634098400301	80-05-15	--	--	--	--	--	--	--	--	--	--
440144098434701	80-05-29	--	--	--	--	--	--	--	--	--	--
					JONES						
435548100560401	80-07-08	660	0	270	60	.0	--	2	0	--	650
440655100253801	80-07-10	1300	0	200	270	.0	--	4	0	--	5000
434931100225301	80-07-01	110	0	160	10	.0	--	0	0	--	480
					LAWRENCE						
442857103513401	80-08-11	<10	4	10	<1	.0	--	<10	1	--	250
443320104004501	80-08-05	<10	0	10	<1	.0	--	<10	1	--	1100
					LINCOLN						
431227096313901	80-07-15	50	--	--	70	--	--	--	--	--	--
431214096292701	80-07-15	50	--	--	50	--	--	--	--	--	--
431132096314201	80-07-15	50	--	--	50	--	--	--	--	--	--
					LYMAN						
434840100100501	80-07-10	1600	0	160	20	.0	--	0	0	--	870
435400100090001	80-07-09	1000	0	180	20	.0	--	4	0	--	1500
440050099560601	80-06-26	2100	0	180	90	.0	--	4	0	--	5100
					MCPHERSON						
455527098490301	80-05-22	--	--	--	--	--	--	--	--	--	--
					MEADE						
441318103221301	80-08-08	<10	0	7	<1	.0	--	<10	1	--	270
					MINER						
435142097503901	80-05-20	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) (01516)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	TRITIUM TOTAL (PCI/L) (07000)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L) (09511)	CARBON-14,DISS APPARENT AGE (YEARS BP) (28004)	URANIUM DISSOLVED, EXTRACTION (UG/L) (80020)
JERAULD											
440634098400301	80-05-15	--	--	--	--	--	--	--	--	24000	--
440144098434701	80-05-29	--	--	--	--	--	--	--	--	--	--
JONES											
435548100560401	80-07-08	25	10	<29	<.3	<21	<.4	--	2.7	--	.01
440655100253801	80-07-10	2.0	200	<26	<.3	27	<.4	--	2.9	--	.01
434931100225301	80-07-01	2.0	10	<26	--	<17	--	<3.0	.70	>82000	.02
LAWRENCE											
442857103513401	80-08-11	6.0	590	<3.3	--	2.0	--	--	.21	--	1.6
443320104004501	80-08-05	5.0	30	<5.1	--	<3.2	--	--	.11	--	2.5
LINCOLN											
431227096313901	80-07-15	--	250	--	--	--	--	--	--	--	--
431214096292701	80-07-15	--	10	--	--	--	--	--	--	--	--
431132096314201	80-07-15	--	33	--	--	--	--	--	--	--	--
LYMAN											
434840100100501	80-07-10	13	60	<17	<.3	17	<.4	--	1.4	--	.02
435400100090001	80-07-09	6.0	100	<16	<.3	52	<.4	--	2.5	--	.03
440050099560601	80-06-26	.0	30	<20	--	36	--	<3.0	1.8	>25000	<.01
MCPHERSON											
455527098490301	80-05-22	--	--	--	--	--	--	--	--	32000	--
MEADE											
441318103221301	80-08-06	6.0	6	<3.6	--	<2.4	--	--	.38	--	2.3
MINER											
435142097503901	80-05-20	--	--	--	--	--	--	--	--	26000	--

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)
			JERAULD		
440634098400301	80-05-15	--	--	--	--
440144098434701	80-05-29	--	--	--	--
			JONES		
435548100560401	80-07-08	<42	<.4	<20	<.4
440655100253801	80-07-10	<36	<.4	26	<.4
434931100225301	80-07-01	<38	--	<16	--
			LAWRENCE		
442857103513401	80-08-11	<4.9	--	1.9	--
443320104004501	80-08-05	<7.5	--	<3.0	--
			LINCOLN		
431227096313901	80-07-15	--	--	--	--
431214096292701	80-07-15	--	--	--	--
431132096314201	80-07-15	--	--	--	--
			LYMAN		
434840100100501	80-07-10	<25	<.4	16	<.4
435400100090001	80-07-09	<23	<.4	50	<.4
440050099560601	80-06-26	<30	--	35	--
			MCPHERSON		
455527098490301	80-05-22	--	--	--	--
			MEADE		
441318103221301	80-08-06	<5.6	--	<2.2	--
			MINER		
435142097503901	80-05-20	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT- I- FIER	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH FIELD (UNITS) (00400)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	TEMPER- ATURE, WATER (DEG C) (00010)
			MINER						
435100097442001	105N58W33DDDD	80-04-09	1120	112FLYD	--	1760	7.6	--	11.0
			MINNEHAHA						
434508096372701	103N48W 5CACA	79-10-02	1630	400SOUX	--	965	7.2	--	9.5
434414096380301	103N48W 7DAC	79-10-04	1110	112PLSC	--	1010	7.3	--	13.5
434432096364201	103N48W 8ADA	79-10-03	1515	112PLSC	--	1610	6.9	--	9.5
434357096364201	103N48W 8DDDD	79-10-03	1230	400SOUX	--	780	7.3	--	10.0
434429096361601	103N48W 9BDCB	79-10-04	0910	400SOUX	--	740	7.4	--	9.0
434400096362201	103N48W 9CCDA	79-10-03	1000	400SOUX	--	--	--	--	--
		80-03-21	1000	400SOUX	--	3520	7.0	--	--
434332096371501	103N48W17ACCC	79-10-04	1400	400SOUX	--	820	7.4	--	9.5
		80-03-21	0800	400SOUX	--	795	7.4	--	8.5
434339096381101	103N48W18ACA	79-10-04	1200	400SOUX	--	1850	7.6	--	9.5
			PENNINGTON						
440735103105601	2N 8E17CDD	80-06-19	--	217FLRV	1580	745	7.2	22	17.8
			STANLEY						
441720100300601	4N33E20C	80-06-25	--	217FLRV	1600	1344	7.1	.0	33.5
		80-08-12	--	217FLRV	1600	2680	7.1	18	33.4
443330101003401	7N26E20B	80-06-25	--	217FLRV	2386	1490	8.1	.0	35.1
444516100533701	9N26E12ADD	80-06-30	--	211DKOT	1800	10000	7.6	42	30.5
			UNION						
424113096411301	91N49W19BCCA	80-05-06	1500	211DKOT	325	1700	7.3	15	12.0
424406096444301	91N50W 3BBBC	80-07-14	--	112BGSX	55	1920	7.2	20	21.5
424145096415101	91N50W13CDA	80-07-14	1300	112BGSX	40	1320	7.3	38	22.0
		80-07-14	1310	112BGSX	40	1320	7.2	48	22.0
424134096440801	91N50W22ABBB	80-07-14	--	112BGSX	26	1890	7.0	77	22.0
430455096260801	95N48W 1BBB	80-07-14	--	112BGSX	12	610	7.4	12	22.0
430346096291601	95N48W11BC	80-07-14	--	112BGSX	--	790	7.6	6.6	18.0
430311096301401	95N48W15BAB	80-07-14	--	112BGSX	13	1010	7.3	20	19.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION, NUMBER	DATE OF SAMPLE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)
					MINER						
435100097442001	80-04-09	520	130	140	41	210	46	4.0	16	--	--
					MINNEHAHA						
434508096372701	79-10-02	510	200	150	34	16	6	.3	4.0	--	--
434414096380301	79-10-04	560	39	110	69	26	9	.5	2.5	--	--
434432096364201	79-10-03	850	110	200	86	21	5	.3	21	--	--
434357096364201	79-10-03	390	34	100	35	20	10	.4	4.5	--	--
434429096361801	79-10-04	380	41	95	35	20	10	.4	3.1	--	--
434400096362201	79-10-03	1700	1400	310	230	75	17	.8	5.9	--	--
	80-03-21	1500	1200	320	180	62	6	.7	7.5	--	--
434332096371501	79-10-04	440	120	130	27	18	8	.4	4.1	--	--
	80-03-21	450	140	140	25	15	7	.3	3.9	--	--
434339096361101	79-10-04	1100	830	310	91	34	9	.4	5.8	--	--
					PENNINGTON						
440735103105601	80-06-19	360	160	100	27	17	9	.4	6.0	254	--
					STANLEY						
441720100300801	80-06-25	1000	1000	290	66	230	33	3.2	23	170	--
	80-08-12	--	--	--	--	--	--	--	--	168	--
443330101003401	80-06-25	51	51	15	3.1	660	96	41	9.9	380	--
444516100533701	80-06-30	120	0	24	13	2300	98	94	1.6	1234	--
					UNION						
424113096411301	80-05-06	750	600	230	41	97	21	1.5	23	180	--
424406096444301	80-07-14	940	780	238	85	91	17	1.3	17	202	0
424145096415101	80-07-14	690	300	175	62	42	11	.7	9.3	476	0
	80-07-14	690	300	175	62	42	11	.7	10	476	0
424134096440801	80-07-14	870	480	228	73	115	22	1.7	8.9	482	0
430455096280801	80-07-14	320	160	86	25	9.0	6	.2	1.0	194	0
430346096291601	80-07-14	390	260	90	40	17	9	.4	4.2	164	0
430311096301401	80-07-14	490	280	130	39	26	10	.5	4.5	246	0

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	BROMIDE DIS-SOLVED (MG/L AS BR) (71870)	IODIDE, DIS-SOLVED (MG/L AS I) (71865)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
					MINER						
435100097442001	80-04-09	390	500	54	.5	--	--	27	--	1239	1.67
					MINNEHAHA						
434508096372701	79-10-02	310	220	1.3	.8	.0	.01	24	--	637	.87
434414096380301	79-10-04	520	67	21	1.0	.2	.01	24	--	634	.86
434432096364201	79-10-03	740	77	66	.5	.9	.13	26	--	999	1.36
434357096364201	79-10-03	360	77	6.0	1.3	.1	.01	25	--	488	.66
434429096361801	79-10-04	340	75	3.7	.7	.1	.00	20	--	478	.65
434400096362201	79-10-03	370	200	280	.5	1.5	.02	27	--	2460	3.35
	80-03-21	360	210	280	.4	1.7	.02	24	--	2280	3.10
434332096371501	79-10-04	320	150	1.1	.4	.0	.00	24	--	550	.75
	80-03-21	310	150	1.6	.4	.0	.00	22	--	546	.74
434339096381101	79-10-04	320	890	6.9	.4	.1	.02	22	--	1560	2.12
					PENNINGTON						
440735103105601	80-06-19	210	190	1.4	.5	.1	.00	9.1	513	474	.70
					STANLEY						
441720100300801	80-06-25	140	1200	90	.3	.4	.02	18	2150	1930	2.92
	80-08-12	138	--	--	--	--	--	--	--	--	--
443330101003401	80-06-25	310	1000	88	2.3	.3	.03	19	2100	1800	2.86
444516100533701	80-06-30	1010	110	3200	1.3	23	13	8.9	6180	6290	8.40
					UNION						
424113096411301	80-05-06	150	700	44	2.3	.4	.02	10	1320	1250	1.80
424406096444301	80-07-14	166	875	108	.6	--	--	--	1600	--	--
424145096415101	80-07-14	390	300	13	.4	--	--	--	920	--	--
	80-07-14	390	300	14	.4	--	--	--	930	--	--
424134096440601	80-07-14	395	400	60	.3	--	--	--	1350	--	--
430455096260801	80-07-14	159	90	2.0	.2	--	--	--	384	--	--
430346096291601	80-07-14	135	245	6.0	.2	--	--	--	556	--	--
430311096301401	80-07-14	202	225	20	.3	--	--	--	704	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)
					MINER						
435100097442001	80-04-09	--	--	--	.01	--	--	--	--	.010	.000
					MINNEHAHA						
434508096372701	79-10-02	.06	.020	.08	.08	.020	.37	.45	.000	--	--
434414096380301	79-10-04	.00	.020	.02	.04	.150	.48	.50	.000	--	--
434432096364201	79-10-03	8.5	.020	8.5	7.9	.120	1.3	9.8	.020	--	--
434357096364201	79-10-03	.03	.020	.05	.00	.040	.40	.45	.010	--	--
434429096361801	79-10-04	8.3	.020	8.3	4.6	.010	.45	8.6	.000	--	--
434400096362201	79-10-03	280	.020	280	250	.060	1.3	280	.010	--	--
	80-03-21	240	.000	240	220	.100	1.9	240	.030	--	--
434332096371501	79-10-04	.77	.020	.79	.33	.130	.37	1.2	.000	--	--
	80-03-21	.21	.010	.22	.18	.230	.45	.67	.020	--	--
434339096361101	79-10-04	.01	.020	.03	.03	.620	1.1	1.1	.020	--	--
					PENNINGTON						
440735103105601	80-06-19	.16	.000	.16	.18	.040	.21	.37	--	.000	--
					STANLEY						
441720100300801	80-06-25	.00	.010	.01	.01	1.900	2.1	2.1	--	.00	--
	80-08-12	--	--	--	--	--	--	--	--	--	--
443330101003401	80-06-25	.02	.010	.03	.02	2.300	2.3	2.3	--	.020	--
444516100533701	80-06-30	.00	.000	.00	.00	5.300	8.7	8.7	--	.960	--
					UNION						
424113096411301	80-05-06	--	--	--	--	--	.57	--	--	.010	--
424406096444301	80-07-14	--	--	--	--	--	--	--	--	--	--
424145096415101	80-07-14	--	--	--	--	--	--	--	--	--	--
	80-07-14	--	--	--	--	--	--	--	--	--	--
424134096440801	80-07-14	--	--	--	--	--	--	--	--	--	--
430455096280801	80-07-14	--	--	--	--	--	--	--	--	--	--
430346096291601	80-07-14	--	--	--	--	--	--	--	--	--	--
430311096301401	80-07-14	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CYANIDE TOTAL (MG/L AS CN) (00720)	SULFIDE TOTAL (MG/L AS S) (00745)
		MINER		
435100097442001	80-04-09	--	--	--
		MINNEHAHA		
434508096372701	79-10-02	.2	.00	--
434414096380301	79-10-04	3.4	.00	--
434432096364201	79-10-03	8.2	.00	--
434357096364201	79-10-03	.8	.00	--
434429096361601	79-10-04	.4	.00	--
434400096362201	79-10-03	8.5	.06	--
	80-03-21	--	.06	--
434332096371501	79-10-04	.8	.00	--
	80-03-21	1.7	.00	--
434339096381101	79-10-04	.5	.00	--
		PENNINGTON		
440735103105601	80-06-19	6.8	--	.0
		STANLEY		
441720100300801	80-06-25	.8	--	.0
	80-08-12	--	--	--
443330101003401	80-06-25	1.7	--	.0
444516100533701	80-06-30	17	--	.0
		UNION		
424113096411301	80-05-06	1.3	--	.2
424406096444301	80-07-14	--	--	--
424145096415101	80-07-14	--	--	--
	80-07-14	--	--	--
424134096440801	80-07-14	--	--	--
430455096280801	80-07-14	--	--	--
430346096291601	80-07-14	--	--	--
430311096301401	80-07-14	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
			MINER						
435100097442001	105N58W33DDDD	80-04-09	--	--	--	510	--	--	--
			MINNEHAHA						
434508096372701	103N48W 5CACA	79-10-02	0	--	--	200	--	10	--
434414096380301	103N48W 7DAC	79-10-04	10	--	--	100	--	10	--
434432096364201	103N48W 6ADA	79-10-03	0	--	--	100	--	10	--
434357096364201	103N48W 8DDDD	79-10-03	0	--	--	200	--	10	--
434429096361601	103N48W 9BDCB	79-10-04	10	--	--	100	--	10	--
434400096362201	103N48W 9CCDA	79-10-03	20	--	--	70	--	10	--
		80-03-21	0	--	--	70	--	0	--
434332096371501	103N48W17ACCC	79-10-04	0	--	--	320	--	10	--
		80-03-21	0	--	--	320	--	0	--
434339096381101	103N48W18ACA	79-10-04	10	--	--	510	--	10	--
			PENNINGTON						
440735103105601	2N 8E17CDD	80-06-19	30	1	10	70	1	0	4
			STANLEY						
441720100300801	4N33E20C	80-06-25	10	3	100	410	0	10	2
		80-08-12	--	--	--	--	--	--	--
443330101003401	7N26E20B	80-06-25	40	1	0	1200	0	0	2
444516100533701	9N26E12ADD	80-06-30	0	1	100	11000	0	10	20
			UNION						
424113096411301	91N49W19BCCA	80-05-06	20	4	20	310	<1	0	1
424406096444301	91N50W 3BBBC	80-07-14	--	--	--	--	--	--	--
424145096415101	91N50W13CDA	80-07-14	--	--	--	--	--	--	--
		80-07-14	--	--	--	--	--	--	--
424134096440801	91N50W22ABBB	80-07-14	--	--	--	--	--	--	--
430455096260801	95N48W 1BBB	80-07-14	--	--	--	--	--	--	--
430346096291601	95N48W11BC	80-07-14	--	--	--	--	--	--	--
430311096301401	95N48W15BAB	80-07-14	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
MINER											
435100097442001	80-04-09	2700	--	--	610	--	--	--	--	--	--
MINNEHAHA											
434508096372701	79-10-02	10	--	--	--	--	.0	--	--	0	--
434414096380301	79-10-04	230	--	--	--	--	.0	--	--	0	--
434432096364201	79-10-03	270	--	--	--	--	.0	--	--	0	--
434357096364201	79-10-03	2200	--	--	--	--	.0	--	--	0	--
434429096361801	79-10-04	320	--	--	--	--	.0	--	--	0	--
434400096362201	79-10-03	50	--	--	--	--	.0	--	--	0	--
	80-03-21	30	--	--	--	--	.0	--	--	0	--
434332096371501	79-10-04	110	--	--	--	--	.0	--	--	0	--
	80-03-21	140	--	--	--	--	.0	--	--	0	--
434339096381101	79-10-04	3100	--	--	--	--	.0	--	--	0	--
PENNINGTON											
440735103105601	80-06-19	90	0	40	30	.0	--	<10	10	--	1600
STANLEY											
441720100300801	80-06-25	1500	0	170	290	.0	--	2	0	--	7100
	80-08-12	--	--	--	--	--	--	--	--	--	--
443330101003401	80-06-25	1100	2	260	100	.0	--	3	0	--	660
444516100533701	80-06-30	140	0	370	10	--	--	0	0	--	2600
UNION											
424113096411301	80-05-06	1800	0	210	100	.0	--	11	0	--	5000
424406096444301	80-07-14	4800	--	--	1600	--	--	--	--	--	--
424145096415101	80-07-14	6600	--	--	660	--	--	--	--	--	--
	80-07-14	5800	--	--	660	--	--	--	--	--	--
424134096440801	80-07-14	11600	--	--	2800	--	--	--	--	--	--
430455096280801	80-07-14	50	--	--	50	--	--	--	--	--	--
430346096291601	80-07-14	60	--	--	50	--	--	--	--	--	--
430311096301401	80-07-14	50	--	--	60	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	VANADIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) (01516)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	TRITIUM TOTAL (PCI/L) (07000)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	CARBON-14,DISS AP-PARENT AGE (YEARS BP) (28004)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)
					MINER						
435100097442001	80-04-09	--	--	--	--	--	--	--	--	--	--
					MINNEHAHA						
434508096372701	79-10-02	--	220	--	--	--	--	--	--	--	--
434414096380301	79-10-04	--	460	--	--	--	--	--	--	--	--
434432096364201	79-10-03	--	<3	--	--	--	--	--	--	--	--
434357096364201	79-10-03	--	160	--	--	--	--	--	--	--	--
434429096361801	79-10-04	--	570	--	--	--	--	--	--	--	--
434400096362201	79-10-03	--	150	--	--	--	--	--	--	--	--
	80-03-21	--	300	--	--	--	--	--	--	--	--
434332096371501	79-10-04	--	700	--	--	--	--	--	--	--	--
	80-03-21	--	530	--	--	--	--	--	--	--	--
434339096361101	79-10-04	--	410	--	--	--	--	--	--	--	--
					PENNINGTON						
440735103105601	80-06-19	2.0	70	9.5	--	11	--	<3.0	2.1	5000	4.3
					STANLEY						
441720100300801	80-06-25	1.0	30	<20	--	30	--	<3.0	2.2	--	<.01
	80-08-12	--	--	--	--	--	--	--	--	>2000	--
443330101003401	80-06-25	2.0	110	<27	--	<18	--	<3.0	.74	<39000	.13
444516100533701	80-06-30	22	80	<110	--	<95	--	<3.0	2.2	>35000	.06
					UNION						
424113096411301	80-05-06	.0	<3	11	.3	22	<.4	<200	1.6	22000	.08
424406096444301	80-07-14	--	160	--	--	--	--	--	--	--	--
424145096415101	80-07-14	--	0	--	--	--	--	--	--	--	--
	80-07-14	--	0	--	--	--	--	--	--	--	--
424134096440801	80-07-14	--	100	--	--	--	--	--	--	--	--
430455096280801	80-07-14	--	0	--	--	--	--	--	--	--	--
430346096291601	80-07-14	--	140	--	--	--	--	--	--	--	--
430311096301401	80-07-14	--	0	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)
MINER					
435100097442001	80-04-09	--	--	--	--
MINNEHAHA					
434508096372701	79-10-02	--	--	--	--
434414096380301	79-10-04	--	--	--	--
434432096364201	79-10-03	--	--	--	--
434357096364201	79-10-03	--	--	--	--
434429096361601	79-10-04	--	--	--	--
434400096362201	79-10-03	--	--	--	--
	80-03-21	--	--	--	--
434332096371501	79-10-04	--	--	--	--
	80-03-21	--	--	--	--
434339096381101	79-10-04	--	--	--	--
PENNINGTON					
440735103105601	80-06-19	14	--	10	--
STANLEY					
441720100300801	80-06-25	<30	--	28	--
	80-08-12	--	--	--	--
443330101003401	80-06-25	<39	--	<17	--
444516100533701	80-06-30	<160	--	<91	--
UNION					
424113096411301	80-05-06	16	.5	22	<.4
424406096444301	80-07-14	--	--	--	--
424145096415101	80-07-14	--	--	--	--
	80-07-14	--	--	--	--
424134096440801	80-07-14	--	--	--	--
430455096280801	80-07-14	--	--	--	--
430346096291601	80-07-14	--	--	--	--
430311096301401	80-07-14	--	--	--	--

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	TIME	GEO-LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	TEMPER-ATURE, WATER (DEG C) (00010)
		YANKTON							
425427097163501	93N54W 6BBCB	80-04-24	0905	112VRML	--	1750	6.8	--	9.5
425235097183101	93N54W14BDBA	80-04-22	0830	112VRML	--	2800	7.1	--	10.0
425147097105001	93N54W23AADC	80-04-22	1000	112VRML	--	1750	7.3	--	13.5
425440097212501	93N55W 4BBC	80-05-07	1300	211DKOT	407	1910	7.1	--	14.4
425415097352601	93N57W 4BCAC	80-08-05	1100	211NBRR	--	1525	7.3	--	15.0
425713097093901	94N54W13DDDD	80-08-07	1355	--	--	2310	8.3	--	19.5
425746097115701	94N54W15ADAA	80-04-22	1100	112VRML	--	960	7.6	--	13.0
425901097250301	94N56W 2DDAA	80-08-06	1030	112VRML	--	1780	8.1	--	15.5
425543097274101	94N56W28DBDD	80-08-06	0900	211NBRR	--	1500	7.4	--	13.0
425835097365701	94N57W 7ADAD	80-08-07	1230	112VRML	--	1780	8.4	--	19.0
430229097143101	95N54W17DDBC	80-04-22	1225	211NBRR	--	3000	7.0	--	11.0
430019097105501	95N54W35ADBA	80-04-22	1145	211NBRR	--	2750	6.5	--	8.0
430338097173701	95N55W12CBAB	80-08-05	0910	211NBRR	--	1130	7.3	--	13.0
430059097175401	95N55W26DAAC	80-04-22	1300	211NBRR	--	2450	7.1	--	13.0
425946097211301	95N55W32DDDC	80-08-07	1100	112VRML	--	2500	7.5	--	15.0
430332097274901	95N56W 9DBCD	80-04-23	1315	112VRML	--	930	6.7	--	11.0
430112097271401	95N56W27BCCA	80-04-23	1400	112VRML	--	2100	6.4	--	11.0
430248097310301	95N57W13ADDD	80-08-06	1210	112VRML	--	1610	7.3	--	16.5
430154097362401	95N57W20CABA	80-04-21	1230	112VRML	--	2700	6.9	--	11.0
430132097354801	95N57W20DDDD	80-08-06	1400	112VRML	--	2610	7.3	--	17.5
430137097340701	95N57W22CDBC	80-04-21	1445	112VRML	--	2700	7.4	--	15.0
430058097362801	95N57W29CABC	80-04-21	1315	112VRML	--	4300	7.6	--	12.0
430952097123201	96N54W 3BDAD	80-04-23	0955	211NBRR	--	2500	6.8	--	11.0
430650097142701	96N54W20DDBD	80-04-23	0900	211NBRR	--	1900	6.9	--	12.0
430952097234001	96N55W 6BCCA	80-04-23	1100	211NBRR	--	3350	7.0	--	10.5
430833097232001	96N55W 7CDDD	80-08-04	1350	112VRML	--	2050	8.2	--	20.0
430647097205501	96N55W21CDCD	80-04-24	1305	112VRML	--	2400	6.7	--	11.0
430506097193601	96N55W34CDDA	80-08-04	1420	112VRML	--	2750	7.8	--	12.0
430913097250001	96N56W11AAAD	80-08-04	1300	112VRML	--	2500	7.5	--	17.0
435958097295901	96N56W31DDCD	80-08-07	1540	--	--	2600	7.9	--	19.0
430558097252201	96N56W35DDCC	80-08-07	0700	112VRML	--	--	--	--	--
431010097381502	97N58W36DDDD	80-08-05	1215	--	--	2620	7.6	--	22.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)
					YANKTON						
425427097163501	80-04-24	870	450	230	71	54	12	.8	9.9	--	--
425235097183101	80-04-22	1200	650	320	93	170	24	2.2	17	--	--
425147097105001	80-04-22	730	230	190	62	60	15	1.0	10	--	--
425440097212501	80-05-07	--	--	--	--	--	--	--	--	--	--
425415097352601	80-08-05	940	710	270	64	19	4	.3	11	--	--
425713097093901	80-08-07	1200	1000	350	70	95	15	1.2	23	--	--
425746097115701	80-04-22	410	270	92	44	14	7	.3	11	--	--
425901097250301	80-08-06	910	670	210	93	51	11	.7	13	--	--
425543097274101	80-08-06	900	630	260	48	30	7	.4	10	--	--
425635097365701	80-08-07	330	120	68	27	220	57	5.3	22	--	--
430229097143101	80-04-22	1600	1300	460	120	87	10	.9	36	--	--
430019097105501	80-04-22	1400	940	410	88	29	4	.3	12	--	--
430338097173701	80-08-05	590	340	160	34	28	9	.5	12	--	--
430059097175401	80-04-22	1100	990	340	66	88	14	1.1	20	--	--
425946097211301	80-08-07	1600	1300	400	140	120	14	1.3	16	--	--
430332097274901	80-04-23	420	140	110	36	29	13	.6	15	--	--
430112097271401	80-04-23	1100	570	210	140	50	9	.7	9.4	--	--
430248097310301	80-08-06	890	480	230	77	33	7	.5	17	--	--
430154097362401	80-04-21	1300	690	310	130	95	13	1.1	15	--	--
430132097354801	80-08-06	1500	1100	350	160	140	16	1.6	22	--	--
430137097340701	80-04-21	1000	610	260	74	160	25	2.2	31	--	--
430058097362601	80-04-21	2500	2100	410	350	220	16	1.9	20	--	--
430952097123201	80-04-23	1200	790	320	100	120	18	1.5	14	--	--
430650097142701	80-04-23	860	580	230	69	62	13	.9	19	--	--
430952097234001	80-04-23	1700	1300	340	210	160	17	1.7	19	--	--
430633097232001	80-08-04	970	660	280	65	130	22	1.8	34	--	--
430647097205501	80-04-24	1100	800	300	76	130	20	1.7	31	--	--
430506097193601	80-08-04	790	630	220	58	190	33	2.9	30	--	--
430913097250001	80-08-04	840	620	230	65	210	34	3.2	23	--	--
435958097295901	80-08-07	1700	1300	440	140	53	6	.6	16	--	--
430558097252201	80-08-07	820	580	220	65	260	40	4.0	23	--	--
431010097361502	80-08-05	1100	940	280	89	200	28	2.7	33	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	BROMIDE DIS-SOLVED (MG/L AS BR) (71870)	IODIDE, DIS-SOLVED (MG/L AS I) (71865)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
					YANKTON						
425427097163501	80-04-24	420	580	16	.3	--	--	28	--	1250	1.70
425235097163101	80-04-22	530	980	50	.5	--	--	30	--	1990	2.71
425147097105001	80-04-22	500	250	66	.3	--	--	32	--	1000	1.36
425440097212501	80-05-07	167	--	--	--	--	--	--	--	--	--
425415097352601	80-08-05	230	680	11	.3	--	--	49	--	1310	1.78
425713097093901	80-08-07	130	1100	60	2.6	--	--	6.4	--	1790	2.43
425746097115701	80-04-22	140	290	12	.2	--	--	6.6	--	560	.76
425901097250301	80-08-06	240	750	59	.3	--	--	29	--	1350	1.84
425543097274101	80-08-06	270	680	2.8	.6	--	--	23	--	1240	1.69
425635097365701	80-08-07	210	480	130	1.0	--	--	20	--	1120	1.52
430229097143101	80-04-22	320	1500	7.0	1.2	--	--	25	--	2450	3.33
430019097105501	80-04-22	450	990	6.7	.8	--	--	19	--	1830	2.49
430338097173701	80-08-05	250	390	3.8	.8	--	--	25	--	830	1.13
430059097175401	80-04-22	130	1000	100	2.9	--	--	8.8	--	1710	2.33
425946097211301	80-08-07	260	1500	16	.5	--	--	23	--	2380	3.24
430332097274901	80-04-23	280	210	2.9	.5	--	--	31	--	610	.83
430112097271401	80-04-23	530	540	64	.3	--	--	30	--	1460	1.99
430248097310301	80-08-06	410	530	4.8	.6	--	--	34	--	1180	1.60
430154097362401	80-04-21	420	1000	22	.3	--	--	29	--	1910	2.60
430132097354801	80-08-06	420	1400	15	.5	--	--	16	--	2360	3.21
430137097340701	80-04-21	390	660	23	.8	--	--	14	--	1710	2.33
430058097362801	80-04-21	340	2300	76	.2	--	--	25	--	3710	5.05
430952097123201	80-04-23	420	1000	8.1	.5	--	--	30	--	1860	2.53
430650097142701	80-04-23	280	650	15	1.4	--	--	16	--	1240	1.69
430952097234001	80-04-23	420	1500	72	.5	--	--	33	--	2740	3.73
430833097232001	80-08-04	310	980	10	1.1	--	--	20	--	1740	2.37
430647097205501	80-04-24	260	1100	19	.5	--	--	33	--	1860	2.53
430506097193601	80-08-04	160	1000	11	.7	--	--	20	--	1730	2.35
430913097250001	80-08-04	220	1100	13	.5	--	--	21	--	1800	2.45
435958097295901	80-08-07	420	1300	9.0	.5	--	--	25	--	2250	3.06
430558097252201	80-08-07	240	1100	17	.5	--	--	17	--	1850	2.52
431010097361502	80-08-05	130	1100	240	2.0	--	--	5.3	--	2030	2.76

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)
YANKTON											
425427097163501	80-04-24	--	--	--	.07	--	--	--	--	.000	.010
425235097183101	80-04-22	--	--	--	.02	--	--	--	--	.000	.000
425147097105001	80-04-22	--	--	--	.03	--	--	--	--	.000	.000
425440097212501	80-05-07	--	--	--	--	--	--	--	--	--	--
425415097352601	80-08-05	--	--	--	15	--	--	--	--	.020	.020
425713097093901	80-08-07	--	--	--	.48	--	--	--	--	.020	.010
425746097115701	80-04-22	--	--	--	1.4	--	--	--	--	.030	.010
425901097250301	80-08-06	--	--	--	.07	--	--	--	--	.030	.010
425543097274101	80-08-06	--	--	--	.00	--	--	--	--	.010	.020
425835097365701	80-08-07	--	--	--	.07	--	--	--	--	.060	.020
430229097143101	80-04-22	--	--	--	.15	--	--	--	--	.010	.000
430019097105501	80-04-22	--	--	--	.03	--	--	--	--	.000	.000
430338097173701	80-08-05	--	--	--	.03	--	--	--	--	.010	.000
430059097175401	80-04-22	--	--	--	.40	--	--	--	--	.010	.000
425946097211301	80-08-07	--	--	--	.18	--	--	--	--	.020	.000
430332097274901	80-04-23	--	--	--	.34	--	--	--	--	.010	.000
430112097271401	80-04-23	--	--	--	23	--	--	--	--	.000	.010
430248097310301	80-08-06	--	--	--	.30	--	--	--	--	.030	.010
430154097362401	80-04-21	--	--	--	12	--	--	--	--	.020	.000
430132097354801	80-08-06	--	--	--	.21	--	--	--	--	.040	.010
430137097340701	80-04-21	--	--	--	.06	--	--	--	--	.000	.040
430058097362801	80-04-21	--	--	--	24	--	--	--	--	.200	.030
430952097123201	80-04-23	--	--	--	.02	--	--	--	--	.000	.010
430650097142701	80-04-23	--	--	--	.03	--	--	--	--	.000	.000
430952097234001	80-04-23	--	--	--	35	--	--	--	--	.000	.000
430833097232001	80-08-04	--	--	--	.23	--	--	--	--	.010	.010
430647097265501	80-04-24	--	--	--	1.0	--	--	--	--	.010	.010
430506097193601	80-08-04	--	--	--	.00	--	--	--	--	.020	.000
430913097250001	80-08-04	--	--	--	.00	--	--	--	--	.010	.010
435958097295901	80-08-07	--	--	--	2.0	--	--	--	--	.030	.010
430558097252201	80-08-07	--	--	--	.01	--	--	--	--	.020	.000
431010097361502	80-08-05	--	--	--	.29	--	--	--	--	.010	.000

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CYANIDE TOTAL (MG/L AS CN) (00720)	SULFIDE TOTAL (MG/L AS S) (00745)
		YANKTON		
425427097163501	80-04-24	--	--	--
425235097163101	80-04-22	--	--	--
425147097105001	80-04-22	--	--	--
425440097212501	80-05-07	--	--	--
425415097352601	80-08-05	--	--	--
425713097093901	80-08-07	--	--	--
425746097115701	80-04-22	--	--	--
425901097250301	80-08-06	--	--	--
425543097274101	80-08-06	--	--	--
425835097365701	80-08-07	--	--	--
430229097143101	80-04-22	--	--	--
430019097105501	80-04-22	--	--	--
430338097173701	80-08-05	--	--	--
430059097175401	80-04-22	--	--	--
425946097211301	80-08-07	--	--	--
430332097274901	80-04-23	--	--	--
430112097271401	80-04-23	--	--	--
430248097310301	80-08-06	--	--	--
430154097362401	80-04-21	--	--	--
430132097354801	80-08-06	--	--	--
430137097340701	80-04-21	--	--	--
430058097362801	80-04-21	--	--	--
430952097123201	80-04-23	--	--	--
430650097142701	80-04-23	--	--	--
430952097234001	80-04-23	--	--	--
430833097232001	80-08-04	--	--	--
430647097205501	80-04-24	--	--	--
430506097193601	80-08-04	--	--	--
430913097250001	80-08-04	--	--	--
435958097295901	80-08-07	--	--	--
430558097252201	80-08-07	--	--	--
431010097381502	80-08-05	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
			YANKTON						
425427097163501	93N54W 6BBCB	80-04-24	--	--	--	180	--	--	--
425235097163101	93N54W14BDBA	80-04-22	--	--	--	340	--	--	--
425147097105001	93N54W23AADC	80-04-22	--	--	--	170	--	--	--
425440097212501	93N55W 4BBC	80-05-07	--	--	--	--	--	--	--
425415097352601	93N57W 4BCAC	80-08-05	--	--	--	100	--	--	--
425713097093901	94N54W13DDDD	80-08-07	--	--	--	230	--	--	--
425746097115701	94N54W15ADAA	80-04-22	--	--	--	60	--	--	--
425901097250301	94N56W 2DDAA	80-08-06	--	--	--	200	--	--	--
425543097274101	94N56W28DBDD	80-08-06	--	--	--	210	--	--	--
425835097365701	94N57W 7ADAD	80-08-07	--	--	--	10000	--	--	--
430229097143101	95N54W17DDBC	80-04-22	--	--	--	1000	--	--	--
430019097105501	95N54W35ADBA	80-04-22	--	--	--	70	--	--	--
430338097173701	95N55W12CBAB	80-08-05	--	--	--	460	--	--	--
430059097175401	95N55W26DAAC	80-04-22	--	--	--	280	--	--	--
425946097211301	95N55W32DDDC	80-08-07	--	--	--	360	--	--	--
430332097274901	95N56W 9DBCD	80-04-23	--	--	--	310	--	--	--
430112097271401	95N56W27BCCA	80-04-23	--	--	--	140	--	--	--
430248097310301	95N57W13ADDD	80-08-06	--	--	--	270	--	--	--
430154097362401	95N57W20CABA	80-04-21	--	--	--	410	--	--	--
430132097354801	95N57W20DDDD	80-08-06	--	--	--	500	--	--	--
430137097340701	95N57W22CDBC	80-04-21	--	--	--	1800	--	--	--
430058097362801	95N57W29CABC	80-04-21	--	--	--	520	--	--	--
430952097123201	96N54W 3BDAD	80-04-23	--	--	--	540	--	--	--
430650097142701	96N54W20DDBD	80-04-23	--	--	--	1200	--	--	--
430952097234001	96N55W 6BCCA	80-04-23	--	--	--	740	--	--	--
430833097232001	96N55W 7CDDD	80-08-04	--	--	--	1900	--	--	--
430647097205501	96N55W21CDCD	80-04-24	--	--	--	90	--	--	--
430506097193601	96N55W34CDDA	80-08-04	--	--	--	89000	--	--	--
430913097250001	96N56W11AAAD	80-08-04	--	--	--	1800	--	--	--
435958097245901	96N56W31DDCD	80-08-07	--	--	--	290	--	--	--
430558097252201	96N56W35DDCC	80-08-07	--	--	--	1500	--	--	--
431010097361502	97N58W36DDDD	80-08-05	--	--	--	960	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
					YANKTON						
425427097163501	80-04-24	2000	--	--	4400	--	--	--	--	--	--
425235097163101	80-04-22	7900	--	--	4000	--	--	--	--	--	--
425147097105001	80-04-22	9300	--	--	1800	--	--	--	--	--	--
425440097212501	80-05-07	--	--	--	--	--	--	--	--	--	--
425415097352601	80-08-05	1000	--	--	80	--	--	--	--	--	--
425713097093901	80-08-07	60	--	--	210	--	--	--	--	--	--
425746097115701	80-04-22	60	--	--	2	--	--	--	--	--	--
425901097250301	80-08-06	20	--	--	1900	--	--	--	--	--	--
425543097274101	80-08-06	6100	--	--	270	--	--	--	--	--	--
425835097365701	80-08-07	30	--	--	150	--	--	--	--	--	--
430229097143101	80-04-22	20000	--	--	760	--	--	--	--	--	--
430019097105501	80-04-22	5400	--	--	1700	--	--	--	--	--	--
430338097173701	80-08-05	5300	--	--	180	--	--	--	--	--	--
430059097175401	80-04-22	50	--	--	140	--	--	--	--	--	--
425946097211301	80-08-07	130	--	--	3700	--	--	--	--	--	--
430332097274901	80-04-23	3600	--	--	1600	--	--	--	--	--	--
430112097271401	80-04-23	<10	--	--	1	--	--	--	--	--	--
430248097310301	80-08-06	20	--	--	1600	--	--	--	--	--	--
430154097362401	80-04-21	60	--	--	70	--	--	--	--	--	--
430132097354601	80-08-06	50	--	--	550	--	--	--	--	--	--
430137097340701	80-04-21	34000	--	--	300	--	--	--	--	--	--
430058097362801	80-04-21	110	--	--	40	--	--	--	--	--	--
430952097123201	80-04-23	13000	--	--	1400	--	--	--	--	--	--
430650097142701	80-04-23	6900	--	--	90	--	--	--	--	--	--
430952097234001	80-04-23	250	--	--	350	--	--	--	--	--	--
430833097232001	80-08-04	24000	--	--	4200	--	--	--	--	--	--
430647097205501	80-04-24	550	--	--	4500	--	--	--	--	--	--
430506097193601	80-08-04	11000	--	--	2600	--	--	--	--	--	--
430913097250001	80-08-04	4400	--	--	2200	--	--	--	--	--	--
435958097295901	80-08-07	60	--	--	5500	--	--	--	--	--	--
430558097252201	80-08-07	720	--	--	2700	--	--	--	--	--	--
431010097381502	80-08-05	130	--	--	450	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) (01516)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	TRITIUM TOTAL (PCI/L) (07000)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	CARBON-14,DISS AP-PARENT AGE (YEARS BP) (28004)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)
					YANKTON						
425427097163501	80-04-24	--	--	--	--	--	--	--	--	--	--
425235097183101	80-04-22	--	--	--	--	--	--	--	--	--	--
425147097105001	80-04-22	--	--	--	--	--	--	--	--	--	--
425440097212501	80-05-07	--	--	--	--	--	--	--	--	28000	--
425415097352601	80-08-05	--	--	--	--	--	--	--	--	--	--
425713097093901	80-08-07	--	--	--	--	--	--	--	--	--	--
425746097115701	80-04-22	--	--	--	--	--	--	--	--	--	--
425901097250301	80-08-06	--	--	--	--	--	--	--	--	--	--
425543097274101	80-08-06	--	--	--	--	--	--	--	--	--	--
425835097365701	80-08-07	--	--	--	--	--	--	--	--	--	--
430229097143101	80-04-22	--	--	--	--	--	--	--	--	--	--
430019097105501	80-04-22	--	--	--	--	--	-	--	--	--	--
430358097173701	80-08-05	--	--	--	--	--	--	--	--	--	--
430059097175401	80-04-22	--	--	--	--	--	--	--	--	--	--
425946097211301	80-08-07	--	--	--	--	--	--	--	--	--	--
430332097274901	80-04-23	--	--	--	--	--	--	--	--	--	--
430112097271401	80-04-23	--	--	--	--	--	--	--	--	--	--
430248097310301	80-08-06	--	--	--	--	--	--	--	--	--	--
430154097362401	80-04-21	--	--	--	--	--	--	--	--	--	--
430132097354801	80-08-06	--	--	--	--	--	--	--	--	--	--
430137097340701	80-04-21	--	--	--	--	--	--	--	--	--	--
430058097362801	80-04-21	--	--	--	--	--	--	--	--	--	--
430952097123201	80-04-23	--	--	--	--	--	--	--	--	--	--
430650097142701	80-04-23	--	--	--	--	--	--	--	--	--	--
430952097234001	80-04-23	--	--	--	--	--	--	--	--	--	--
430853097232001	80-08-04	--	--	--	--	--	--	--	--	--	--
430647097205501	80-04-24	--	--	--	--	--	--	--	--	--	--
430506097193601	80-08-04	--	--	--	--	--	--	--	--	--	--
430913097250001	80-08-04	--	--	--	--	--	--	--	--	--	--
435958097245901	80-08-07	--	--	--	--	--	--	--	--	--	--
430558097252201	80-08-07	--	--	--	--	--	--	--	--	--	--
431010097381502	80-08-05	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)
			YANKTON		
425427097163501	80-04-24	--	--	--	--
425235097163101	80-04-22	--	--	--	--
425147097105001	80-04-22	--	--	--	--
425440097212501	80-05-07	--	--	--	--
425415097352601	80-08-05	--	--	--	--
425713097093901	80-08-07	--	--	--	--
425746097115701	80-04-22	--	--	--	--
425901097250301	80-08-06	--	--	--	--
425543097274101	80-08-06	--	--	--	--
425835097365701	80-08-07	--	--	--	--
430229097143101	80-04-22	--	--	--	--
430019097105501	80-04-22	--	--	--	--
430338097173701	80-08-05	--	--	--	--
430059097175401	80-04-22	--	--	--	--
425946097211301	80-08-07	--	--	--	--
430332097274901	80-04-23	--	--	--	--
430112097271401	80-04-25	--	--	--	--
430248097310301	80-08-06	--	--	--	--
430154097362401	80-04-21	--	--	--	--
430132097354801	80-08-06	--	--	--	--
430137097340701	80-04-21	--	--	--	--
430058097362801	80-04-21	--	--	--	--
430952097123201	80-04-23	--	--	--	--
430650097142701	80-04-23	--	--	--	--
430952097234001	80-04-23	--	--	--	--
430833097232001	80-08-04	--	--	--	--
430647097205501	80-04-24	--	--	--	--
430506097193601	80-08-04	--	--	--	--
430913097250001	80-08-04	--	--	--	--
435958097245901	80-08-07	--	--	--	--
430558097252201	80-08-07	--	--	--	--
431010097381502	80-08-05	--	--	--	--

INDEX

Page
Accuracy of field data and computed results.... 11
Acre-ft, definition of.... 2
Adenosine triphosphate, definition of.... 2
Akron, IA, Big Sioux River at.... 273-280
Algae, definition of.... 2
  blue-green, definition of.... 5
  green, definition of.... 5
Algal growth potential, definition of.... 2
Alpena, Sand Creek near (James River basin)....237, 318
Angostura Dam, Cheyenne River below.... 57-58
Angostura Reservoir near Hot Springs.... 56
Aquifer, definition of.... 2
Arpan, Indian Creek near.... 116
Artesian, definition of.... 2
Ash mass, definition of.... 3
Ashton, James River at....227-228, 316
Aurora County, quality of ground water in....370-378, 397-405
Avance, Cherry Creek tributary near.... 293
  Cherry Creek tributary No. 3 near.... 293

Bacteria, definition of.... 2
Bad River, near Fort Pierre.... 158-161
  near Midland....157, 309
Battle Creek, at Hermosa (Cheyenne River tributary).... 68, 303
  near Keystone (Cheyenne River tributary).... 65, 302
  tributary near Keystone (tributary to Cheyenne River).... 292
Beadle County, ground-water levels in.... 367
Beaver Creek, near Buffalo Gap (tributary to Cheyenne River).... 60, 301
  near Faith (tributary to Cherry Creek).... 293
  at Mallo Camp, near Four Corners, WY (tributary to Stockade Beaver Creek)... 50, 299
Bed material, definition of.... 2
Belle Fourche, Belle Fourche Reservoir near.... 114
  Hay Creek at....109, 308
  Inlet Canal near.... 110-113
  Redwater River above....108, 308
Belle Fourche Reservoir near Belle Fourche.... 114
Belle Fourche River, at Wyoming-South Dakota State line....101, 306
  near Elm Springs.... 126-132
  near Fruitdale....115, 309
  near Sturgis.... 121-125
Beresford, Saddlerock Creek near.... 295
  Saddlerock Creek tributary near.... 295
Beulah, WY, Sand Creek (Cheyenne River basin) near Ranch A, near....104, 307
Big Bend, Powerhouse Outflow at.... 348-349
Big Hollow Creek tributary near Scenic.... 29
Big Sioux River, at Akron, IA.... 283-290
  at North Cliff Avenue, at Sioux Falls.... 279-281
  near Brookings....273, 323
  near Castlewood....269, 321
  near Dell Rapids.... 274-277
  near Watertown....267, 321
Biochemical oxygen demand (BOD), definition of.... 2
Biomass, definition of.... 2
Blunt, Medicine Knoll Creek near.... 162
Bon Homme County, ground-water levels in.... 367
Bottom material, definition of.... 3
Boulder Creek near Deadwood.... 292
Boxelder Creek, at Camp Columbus, near Nemo.... 95
  at Doty School, near Blackhawk.... 96
  at Nemo.... 93
  near Nemo.... 94, 304
  near Rapid City.... 96
Brookings, Big Sioux River near....273, 323
  Deer Creek near.... 296
  Sixmile Creek near....272, 323
Brookings County, quality of ground water in... 397-405
Brown County, ground-water levels in.... 368
Buckhorn, WY, Cold Springs Creek at....102, 306
Buffalo, South Fork Grand River at.... 26, 298
Buffalo Gap, Beaver Creek near (tributary to Cheyenne River).... 60, 301
  Cheyenne River near.... 61-64
Butte County, quality of ground water in.... 397-405

Page
Cain Creek tributary at Imlay.... 294
Camp Crook, Little Missouri River at.... 20, 297
Carpenter, Foster Creek tributary near.... 295
Cascade Springs near Hot Springs.... 55, 300
Cash, South Fork Grand River near.... 27
Castle Creek, above Deerfield Reservoir, near Hill City.... 70-74
  below Deerfield Dam.... 76, 303
Castlewood, Big Sioux River near....269, 321
  Stray Horse Creek near....270, 322
Cells per volume.... 3
Cfs-day, definition of.... 3
Charles Mix County, quality of ground water in....370-378, 397-405
Chemical analyses of ground water.... 370-452
Chemical oxygen demand (COD), definition of.... 3
Cherry Creek, Cheyenne River at.... 135-144
  near Plainview.... 134
  tributary near Avance.... 293
  tributary No. 3 near Avance.... 293
Cheyenne River, at Cherry Creek.... 135-144
  at Edgemont.... 53, 300
  below Angostura Dam.... 57-58
  near Buffalo Gap.... 61-64
  near Eagle Butte.... 145-146
  near Plainview....133, 309
  near Wasta.... 97, 305
Chlorophyll, definition of.... 3
Clayton, Wolf Creek (tributary to James River) near....241, 319
Codington County, quality of ground water in... 397-405
Cold Brook Reservoir at Hot Springs.... 336-340
Cold Springs Creek at Buckhorn, WY....102, 306
Coliform bacteria, fecal, definition of.... 2
  fecal streptococcal, definition of.... 2
  total, definition of.... 2
Collection and computation of surface-water data.... 9
Collection and examination of water-quality data.... 12
Collection and explanation of ground-water level data.... 13
Collection of ground-water data.... 13
Color unit, definition of.... 3
Columbia, James River at.... 217-223
Conductance at miscellaneous sites.... 297-324
Contents, definition of.... 3
Control, definition of.... 3
Control structure, definition of.... 3
Cooperation.... 1
Corson, Split Rock Creek at....282, 324
Cottonwood Creek, tributary near Edgemont (tributary to Cheyenne River).... 292
  tributary near Winner (tributary to White River).... 294
Crest-stage partial-records, discharge at.... 292-296
Crow Creek near Gann Valley.... 165
Cubic feet per square mile, definition of.... 3
Cubic foot per second, definition of.... 3
Custer County, quality of ground water in....370-378, 397-405
Custer, Grace Coolidge Creek near Game Lodge, near.... 66, 302

Davison County, quality of ground water in....370-378, 406-414
Day County, quality of ground water in.... 406-414
Deadman Creek tributary near Mobridge.... 292
Deer Creek near Brookings.... 296
Deerfield Dam, Castle Creek below.... 76
Deerfield Reservoir near Hill City.... 75
Definition of terms and abbreviations.... 2-8
DeGrey, Missouri River tributary near.... 293
Dell Rapids, Big Sioux River near.... 274-277
Deuel County, quality of ground water in.... 406-414
Diatoms, definition of.... 5
Discharge, definition of.... 3
  mean, definition of.... 3
  instantaneous, definition of.... 3
Discharge at miscellaneous sites.... 292-296
Dissolved, definition of.... 3

Page
Diversity index, definition of.................. 3
Downstream order and station number............ 8
Drainage area, definition of................... 4
Drainage basin, definition of.................. 4
Dry Creek near Parkston (tributary to James River)........................... 295
Dry mass, definition of........................ 3
Dupree, Elm Creek (tributary to Moreau River) tributary near.................... 296

Eagle Butte, Cheyenne River near...............145, 146
Edgemont, Cheyenne River at.................... 53, 300
  Cottonwood Creek (tributary to Cheyenne River) tributary near................. 292
  Fiddle Creek near............................ 292
  Hat Creek near............................... 54, 300
Elk Creek, near Elm Springs.................... 99, 305
  near Rapid City.............................. 98
Elm Creek, Lake Francis Case near.............. 350-354
Elm Creek tributary near Dupree (tributary to Moreau River).......................... 296
Elm River, at Westport.........................225, 315
  tributary near Leola......................... 294
Elm Springs, Belle Fourche River near.......... 126-132
  Elk Creek near............................... 99, 305
Enemy Creek near Mitchell......................240, 319
Estelline, Hidewood Creek near.................271, 321
  North Deer Creek near........................ 296
  Peg Munky Run near........................... 296
Explanation of, surface-water records.......... 9
  water-quality records........................ 12
  ground-water level records................... 13

Faith, Beaver Creek near (tributary to Cherry Creek)............................ 293
  Moreau River near............................ 43, 299
Fall River County, quality of ground water in.. 370-378
Fall River, at Hot Springs..................... 59, 301
Farmingdale, Rapid Creek near.................. 82-92
Fiddle Creek near Edgemont..................... 292
Firesteel Creek, near Mount Vernon (James River basin)............................239, 319
Firesteel, Little Moreau River tributary near.. 296
Forestburg, James River near...................238, 318
Fort Pierre, Bad River near.................... 158-161
Fort Randall Dam, Missouri River at............ 193-203
Fort Thompson, Lake Sharpe near................ 164
Foster Creek tributary near Carpenter.......... 295
Four Corners, WY, Beaver Creek at Mallo Camp, near......................... 50, 299
Fruitdale, Belle Fourche River near............115, 309

Gage height, definition of..................... 4
Gaging station, definition of.................. 4
Gann Valley, Crow Creek near................... 165
  Smith Creek tributary near................... 293
Gavins Pt Dam, Powerhouse Outflow at........... 362-366
Gayville, Missouri River near.................. 252-255
Grace Coolidge Creek, near Game Lodge, near Custer.............................. 66, 302
  near Fairburn................................ 67
  near Hermosa................................. 67
Grand River, at Shadehill...................... 29-30
  at Little Eagle.............................. 31-42
Groton, Mud Creek tributary near............... 294
  Mud Creek tributary No. 2 near............... 294
Ground water, chemical analyses of............. 370-452
Ground-water level records..................... 367-369

Haakon County, quality of ground water in...... 370-378
Hand County, ground-water levels in............ 406-423
Hanson County, quality of ground water in...... 415-423
Harding County, quality of ground water in..... 415-423
Hardness, definition of........................ 4
Hat Creek near Edgemont........................ 54, 300
Hay Creek at Belle Fourche.....................109, 308
Hell Canyon, near Custer....................... 52
  near Jewel Cave, near Custer................. 52
Hermosa, Battle Creek at (Cheyenne River tributary)............................... 68, 303
  Spring Creek near (Cheyenne River tributary)............................. 69, 303
Herreid, Spring Creek near (Missouri River tributary)............................... 21-24
Hidewood Creek near Estelline..................271, 321
Hill City, Castle Creek above Deerfield Reservoir, near.......................... 70-74
  Deerfield Reservoir near..................... 75
  Palmer Creek near............................ 292
Horse Creek near Vale.......................... 117-120

Page
Hot Springs, Angostura Reservoir near.......... 56
  Cascade Springs near......................... 55, 300
  Cold Brook Reservoir at...................... 336-340
  Fall River at................................ 59, 301
Hughes County, quality of ground water in...... 415-423
Huron, James River at.......................... 233-236
Hutchinson County, quality of ground water in.. 370-378
Hydrologic bench-mark station, definition of... 9
Hydrologic conditions.......................... 1
Hydrologic unit, definition of................. 4

Imlay, Cain Creek tributary at................. 294
Indian Creek near Arpan........................ 116
Inlet Canal near Belle Fourche................. 110-113
Instantaneous discharge, definition of......... 3
Interior, White River tributary near........... 294
Introduction................................... 1
Ipswich, Preachers Run tributary at............ 294

Jackson County, quality of ground water in..... 379-387
James River, at Ashton.....................227-228, 316
  at Columbia.................................. 217-223
  at Huron..................................... 233-236
  at La Moure, ND.............................. 207-212
  at North Dakota-South Dakota State line...... 213-216
  near Forestburg..............................238, 318
  near Redfield................................232, 318
  near Scotland................................ 242-251
Jerauld County, quality of ground water in........................379-387, 424-432
Jones County, quality of ground water in....... 424-432

Kadoka, White River near.......................168, 311
Kennebec, Medicine Creek at.................... 163
Keya Paha River at Wewela......................204, 314
Keyhole Reservoir near Moorcroft, WY........... 100
Keystone, Battle Creek near (Cheyenne River tributary)......................... 65, 302
  Battle Creek tributary near (Cheyenne River tributary)....................... 292

Lake Creek below refuge, near Tuthill..........170, 312
Lake Francis Case, at Pickstown................ 185-192
  near Elm Creek............................... 350-354
Lake Oahe, near Dam............................ 341-347
  near Pierre.................................. 147
  near Pollock................................. 325-330
Lake Pocasse at Pollock........................ 331-335
Lake Sharpe near Fort Thompson................. 164
Lakes and reservoirs:
  Angostura Reservoir near Hot Springs......... 56
  Belle Fourche Reservoir near Belle Fourche... 114
  Deerfield Reservoir near Hill City........... 75
  Francis Case, Lake, at Pickstown............. 185-192
  Keyhole Reservoir near Moorcroft, WY......... 100
  Lewis and Clark Lake near Yankton............ 205
  Oahe, Lake, near Pierre...................... 147
    near Pollock............................... 325-330
  Pactola Reservoir near Silver City........... 79-82
  Pocassee, Lake, at Pollock................... 331-335
  Shadehill Reservoir at Shadehill............. 28
  Sharpe, Lake, near Fort Thompson............. 164
La Moure, ND, James River at................... 207-212
Lawrence County, quality of ground water in.........................379-387, 424-432
Lewis and Clark Lake, near Dam................. 355-361
  near Yankton................................. 205
Leola, Elm River tributary near................ 294
  Willow Creek tributary near.................. 294
Lincoln County, ground water levels in......... 368
Little Eagle, Grand River at................... 31-42
Little Missouri River at Camp Crook............ 20, 297
Little Moreau River tributary near Firesteel... 296
Little Oak Creek near Mission.................. 294
Little Vermillion River near Salem.............260, 319
Little White River, below White River..........174, 314
  near Martin..................................169, 311
  near Rosebud.................................173, 313
  near Vetal...................................171, 312
  tributary near Martin........................ 294
Lyman County, quality of ground water in....... 424-432

Map showing location of, gaging stations....... 16
  crest-stage partial-record stations.......... 17
  surface-water quality stations............... 18
  ground-water observation wells............... 19
Maple River at North Dakota-South Dakota State line.....................................224, 315
Marshall County, ground-water levels in........ 369

Page
Martin, Little White River near................169, 311
  Little White River tributary near............ 294
Maskell, NE, Missouri River near............... 256-259
McPherson County, quality of ground water in........................379-387, 424-432
Meade County, quality of ground water in........................379-387, 424-432
Meade Street Drain at Rapid City............... 88
Mean concentration, definition of.............. 6
Mean discharge, definition of.................. 3
Medicine Creek (tributary to Missouri River) at Kennebec........................ 163
Medicine Creek (tributary to Turtle Creek) near Zell...............................231, 317
Medicine Creek tributary No. 2 near Vivian..... 293
Medicine Knoll Creek near Blunt................ 162
Metamorphic stage, definition of............... 4
Methylene blue active substance (MBAS), definition of........................... 4
Micrograms per gram (ug/g), definition of...... 4
Micrograms per liter (UG/L, ug/L), definition of........................... 4
Midland, Bad River near........................157, 309
Miller, Shaefer Creek tributary near........... 295
Milligrams per liter (MG/L, mg/L), definition of........................... 4
Milligrams of carbon, definition of............ 5
Milligrams of oxygen, definition of............ 5
Miner County, quality of ground water in........................379-387, 424-442
Minnehaha County, ground-water levels in....... 369
  quality of ground water in................... 433-442
Miscellaneous, field determinations............ 297
  temperature measurements..................... 297
Mission, Little Oak Creek near................. 294
Missouri River, at Fort Randall Dam............ 193-203
  at Pierre.................................... 148-156
  at Sioux City, IA............................ 291
  at Yankton...................................206, 315
  near Gayville................................ 252-255
  near Maskell, NE............................. 256-259
  near Ponca, NE............................... 263-266
Missouri River tributary near DeGrey........... 293
Mitchell, Enemy Creek near.....................240, 319
Mobridge, Deadman Creek tributary near......... 292
Moccasin Creek near Warner.....................226, 316
Moorcroft, WY, Keyhole Reservoir near.......... 100
Moreau River, near Faith....................... 43, 299
  near Whitehorse.............................. 44-49
Mount Vernon, Firesteel Creek near (James River basin)............................239, 319
Mud Creek tributary, near Groton............... 294
  No. 2 near Groton............................ 294
Murray Ditch at Wyoming-South Dakota State line..............................105, 307
Mush Creek (tributary to Missouri River) near Pierre............................ 293

National Geodetic Vertical Datum, definition of........................... 4
National stream-quality accounting network..... 9
Nemo, Boxelder Creek at........................ 93
  Boxelder Creek at Camp Columbus near......... 95
  Boxelder Creek near.......................... 94, 304
Newcastle, WY, Stockade Beaver Creek near...... 51, 299
North Dakota-South Dakota State line, Maple River at.......................... 224-315
North Deer Creek, near Estelline............... 296
North Fork Grand River, near White Butte....... 25, 297
North Fork Medicine Creek near Vivian (Missouri River tributary).............. 293
North Fork Snake Creek tributary near Wecota... 295
Numbering system for wells and miscellaneous sites................................. 8

Oacoma, White River near....................... 175-184
Oglala, White River near.......................167, 310
  White Clay Creek near........................166, 310
Organic mass, definition of.................... 3
Organism, definition of........................ 4
  count per area, definition of................ 4
  count per volume, definition of.............. 4
  count, total, definition of.................. 4
Orient, Shaefer Creek near..................... 295
  Shaefer Creek tributary near................. 295
Other data available........................... 11

Pactola Dam, Rapid Creek below................. 79-82
Pactola Reservoir near Silver City............. 78
Palmer Creek near Hill City.................... 292

Page
Parameter codes, definition of................. 4
Parker, West Fork Vermillion River near........261, 320
Parkston, Dry Creek near....................... 295
  South Branch Dry Creek near.................. 295
Partial-record station, definition of.......... 4
Particle size, definition of................... 4
  classification, definition of................ 5
Peg Munky Run near Estelline................... 296
Pennington County, quality of ground water in........................388-396, 433-442
Percent composition, definition of............. 5
Pesticide program, definition of............... 9
Pesticides, definition of...................... 5
Phytoplankton, definition of................... 5
Pickstown, Lake Francis Case at................ 185-192
Picocurie, definition of....................... 5
Pierre, Missouri River at...................... 148-156
  Mush Creek near.............................. 293
  Lake Oahe near............................... 147
Plainview, Cherry Creek near...................133, 309
  Cheyenne River near..........................133, 309
Plankton, definition of........................ 5
Pollock, Lake Oahe near........................ 325-330
  Lake Pocasse at.............................. 331-335
Polychlorinated biphenyls, definition of....... 5
Ponca, Missouri River near..................... 263-266
Preachers Run tributary at Ipswich............. 294
Primary productivity, definition of............ 5
Publications................................... 14

Radiochemical program, definition of........... 9
Rapid City, Boxelder Creek near................ 96
  Meade Street Drain at........................ 86
  Rapid Creek above Canyon Lake, near.......... 83, 304
  Rapid Creek above Water Treatment Plant, at.. 84
  Rapid Creek at............................... 85, 304
  Rapid Creek at East Main Street, at.......... 86
  Rapid Creek below Hawthorne Ditch, at........ 87
Rapid Creek, above Canyon Lake, near Rapid City............................. 83, 304
  above Pactola Reservoir, at Silver City...... 77
  above Water Treatment Plant, at Rapid City... 84
  at East Main Street, at Rapid City........... 86
  at Rapid City................................ 85, 304
  below Hawthorne Ditch, at Rapid City......... 87
  below Pactola Dam............................79-82, 304
  near Farmingdale............................. 89-92
Records of discharge by other agencies......... 11
Records, ground-water level.................... 367-369
Redfield, James River near.....................232, 318
Redig, South Fork Moreau River tributary near.. 292
Redwater Creek at Wyoming-South Dakota State line..............................106, 307
Redwater River above Belle Fourche.............108, 308
Ree Heights, Wolf Creek near (tributary to Turtle Creek)........................... 229
References, selected........................... 14
Reservoirs, See Lakes and reservoirs...........
Rosebud Creek at Rosebud.......................172, 313
Rosebud, Little White River near...............173, 313
Runoff, in inches, definition of............... 6

Saddlerock Creek, near Beresford............... 295
  tributary near Beresford..................... 295
Salem, Little Vermillion River near............260, 319
Sand Creek (James River basin) near Alpena.....237, 318
Sand Creek (Cheyenne River basin), near Ranch A, near Beulah, WY.................104, 307
  near Sundance, WY............................ 103
Scenic, Big Hollow Creek tributary near........ 29
Scotland, James River near..................... 242-251
Sediment....................................... 12
Sediment, definition of........................ 6
Seneca, South Fork Snake Creek tributary near.......................... 295
Shadehill, Grand River at...................... 29-30
Shadehill Reservoir at Shadehill............... 28
Shaefer Creek, near Orient..................... 295
  tributary near Miller........................ 295
  tributary near Orient 295
Silver City, Rapid Creek above Pactola Reservoir, at........................... 77, 304
  Pactola Reservoir near....................... 79-82
Sioux Falls, Skunk Creek at....................278, 324
  Big Sioux River at North Cliff Avenue, at.... 279-281
Sixmile Creek near Brookings...................272, 323
Skunk Creek at Sioux Falls.....................278, 324
Smith Creek tributary near Gann Valley......... 293
Snake Creek near Ashton........................ 317
Solute, definition of.......................... 6

Page
South Branch Dry Creek near Parkston.......... 295
South Fork Grand River, at Buffalo............ 26, 298
  near Cash.................................. 27, 298
South Fork Moreau River tributary near Redig... 292
South Fork Snake Creek tributary near Seneca... 295
Spearfish Creek at Spearfish..................107, 308
Special networks and programs................ 9
Specific conductance, at miscellaneous sites... 297-324
  definition of.............................. 6
Split Rock Creek at Corson....................282, 324
Spring Creek (tributary to Cheyenne
    River) near Hermosa...................... 69, 303
Spring Creek (tributary to Missouri
    River) near Herreid...................... 21-24
Stage-discharge relation, definition of....... 6
Stanley County, quality of ground water in..... 433-442
Stockade Beaver Creek near Newcastle, WY....... 51, 299
Stray Horse Creek near Castlewood.............270, 322
Streamflow, definition of..................... 6
Sturgis, Belle Fourche River near............. 121-125
Substrate, definition of...................... 6
  Artificial, definition of.................. 6
  Natural, definition of..................... 6
Surface area, definition of................... 6
Surficial bed material, definition of......... 6
Suspended sediment, definition of............. 7
  concentration, definition of............... 6
  discharge, definition of................... 6
  load, definition of........................ 6
Suspended recoverable, definition of.......... 7
Suspended total, definition of................ 7

Taxonomy, definition of....................... 7
Temperature at miscellaneous sites............ 297-324
Terms and abbreviations, definition of........ 2-8
Time-weighted average, definition of.......... 7
Tons per acre-foot, definition of............. 7
Tons per day, definition of................... 7
Total in bottom material, definition of....... 7
Total load, definition of..................... 7
Total recoverable, definition of.............. 7
Total sediment discharge, definition of....... 6
Tripp County, quality of ground water in....... 388-396
Tritium network, definition of................ 9
Tulare, Turtle Creek near.....................230, 317
Turbidity, definition of...................... 8
Turtle Creek near Tulare......................230, 317
Tuthill, Lake Creek below refuge, near........170, 312

Union County, quality of ground water in....... 433-442

Vale, Horse Creek near........................ 117-120
Vermillion River near Wakonda.................262, 320
Vetal, Little White River near................171, 312

Page
Vivian, Medicine Creek tributary No. 2 near
    (tributary to Missouri River)............ 293
  North Fork Medicine Creek near
    (tributary to Missouri River)............ 293

Wakonda, Vermillion River near................262, 320
Warner, Moccasin Creek near...................226, 316
Wasta, Cheyenne River near.................... 97, 305
Water analysis, ground water.................. 370-452
Water temperature............................. 12
Water-supply papers, definition of............ 1
Watertown, Big Sioux River near...............267, 321
  Willow Creek near...........................268, 321
Wecota, North Fork Snake Creek tributary near.. 295
Weighted average.............................. 8
Well-numbering system......................... 8
West Fork Vermillion River near Parker........261, 320
Westport, Elm River at........................225, 315
Wet mass, definition of....................... 3
Wewela, Keya Paha River at....................204, 314
White Butte, North Fork Grand
    River near............................... 25, 297
White Clay Creek near Oglala..................166, 310
White River, Little White River
    below.....................................174, 314
White River, near Oglala......................167, 310
  near Kadoka.................................168, 311
  near Oacoma................................. 175-184
  tributary near Interior..................... 294
Whitehorse, Moreau River
    near...................................... 44-49
Willow Creek, near
    Watertown.................................268, 321
  tributary near Leola........................ 294
Winner, Cottonwood Creek tributary
    (tributary to White River) near.......... 294
Wolf Creek (tributary to James River)
    near Clayton..............................241, 319
Wolf Creek (tributary to Turtle Creek)
    near Ree Heights......................... 229
WRD, definition of............................ 8
WSP, definition of............................ 8
Wyoming-South Dakota State line, Belle
    Fourche River at..........................101, 306
  Murray Ditch at.............................105, 307
  Redwater Creek at...........................106, 307

Yankton County, quality of ground water in..... 443-452
Yankton, Lewis and Clark Lake near............ 205
  Missouri River at...........................206, 315

Zell, Medicine Creek (tributary to
    Turtle Creek) near....................... 221
Zooplankton, definition of.................... 5

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October 1, 1978

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	$2.54\text{x}10^{1}$	millimeters (mm)
	$2.54\text{x}10^{-2}$	meters (m)
feet (ft)	$3.048\text{x}10^{-1}$	meters (m)
miles (mi)	$1.609\text{x}10^{0}$	kilometers (km)
	Area	
acres	$4.047\text{x}10^{3}$	square meters (m^2)
	$4.047\text{x}10^{-1}$	square hectometers (hm^2)
	$4.047\text{x}10^{-3}$	square kilometers (km^2)
square miles (mi^2)	$2.590\text{x}10^{0}$	square kilometers (km^2)
	Volume	
gallons (gal)	$3.785\text{x}10^{0}$	liters (L)
	$3.785\text{x}10^{0}$	cubic decimeters (dm^3)
	$3.785\text{x}10^{-3}$	cubic meters (m^3)
million gallons	$3.785\text{x}10^{3}$	cubic meters (m^3)
	$3.785\text{x}10^{-3}$	cubic hectometers (hm^3)
cubic feet (ft^3)	$2.832\text{x}10^{1}$	cubic decimeters (dm^3)
	$2.832\text{x}10^{-2}$	cubic meters (m^3)
cfs-days	$2.447\text{x}10^{3}$	cubic meters (m^3)
	$2.447\text{x}10^{-3}$	cubic hectometers (hm^3)
acre-feet (acre-ft)	$1.233\text{x}10^{3}$	cubic meters (m^3)
	$1.233\text{x}10^{-3}$	cubic hectometers (hm^3)
	$1.233\text{x}10^{-6}$	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	$2.832\text{x}10^{1}$	liters per second (L/s)
	$2.832\text{x}10^{1}$	cubic decimeters per second (dm^3/s)
	$2.832\text{x}10^{-2}$	cubic meters per second (m^3/s)
gallons per minute (gal/min)	$6.309\text{x}10^{-2}$	liters per second (L/s)
	$6.309\text{x}10^{-2}$	cubic decimeters per second (dm^3/s)
	$6.309\text{x}10^{-5}$	cubic meters per second (m^3/s)
million gallons per day	$4.381\text{x}10^{1}$	cubic decimeters per second (dm^3/s)
	$4.381\text{x}10^{-2}$	cubic meters per second (m^3/s)
	Mass	
tons (short)	$9.072\text{x}10^{-1}$	megagrams (Mg) or metric tons

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